

United States Army
Fort Monmouth, New Jersey

**Underground Storage Tank
Closure and Site Investigation
Report**

***Building 1107
Main Post-West Area***

**NJDEP UST Registration No. 81533-167 and 233
DICAR No. 98-05-12-0151-41**

January 2000

**UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT**

BUILDING 1107

**MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 81533-167 AND 233**

JANUARY 2000

PREPARED FOR:

**UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
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EXECUTIVE SUMMARY

UST Closure

Between May 12, 1998, and May 18, 1998, two underground storage tanks (USTs) were closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) closure procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The USTs, NJDEP Registration Nos. 0081533-167 and 233 (Fort Monmouth ID No. 1107), were located northeast of Building 1107. UST Nos. 0081533-167 and 233 were both 1,000-gallon #2 fuel oil USTs. The fill ports were located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, both USTs were inspected for corrosion holes. Numerous holes were noted in one UST (designated as 1107B). Soils at the location of the holes were dark in color and appeared to be contaminated. The NJDEP hotline was notified and the case was assigned DICAR No. 98-05-12-0151-41.

Between May 12, 1998, and May 27, 1998, potentially contaminated soil was removed from the excavation area. In total, approximately 92 cubic yards of potentially contaminated soils were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 516.73 mg/kg. Groundwater was encountered at 4.0 feet below ground surface and no sheen was observed.

All post excavation soil samples collected from the UST excavation at Building 1107 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of potentially contaminated soil and the potential of groundwater contamination, two (2) groundwater samples were collected at Building 1107. On November 13, 1999, and January 8, 2000, Building 1107 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's).

All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-167 and 233 at Building 1107.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

Two underground storage tanks (USTs), New Jersey Department of Environmental Protection (NJDEP) Registration Nos. 81533-167 and 233, were closed at Building 1107 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey between May 12, 1998, and May 18, 1998. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The USTs were 1,000-gallon steel and fiberglass tanks containing No. 2 fuel oil.

Decommissioning activities for UST No. 81533-167 and 233 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 81533-167 and 233 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 81533-167 and 233 are included in Appendices A and B, respectively.

After removal of the potentially contaminated soil, the site was assessed. Based on inspecting the UST, field screening of remaining subsurface soils, and reviewing analytical results of soil samples and groundwater samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

This UST Closure and Site Investigation Report has been prepared by Versar, to assist the U.S. Army DPW in complying with the NJDEP regulations. The applicable NJDEP regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling and groundwater investigation, are presented in the final section of this report.

1.2 SITE DESCRIPTION

Building 1107 is located in the Main Post-West area of the Fort Monmouth Army Base. USTs No. 0081533-167 and 233 were located northeast of Building 1107 and appurtenant copper piping ran approximately five- (5) feet south to Building 1107. The fill port area was located directly above the tanks. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1107. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapeczka, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Main Post area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 1107 is located approximately 400 feet east of an unknown stream, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 1107 is anticipated to be to the west.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- The contractor performing the closure prior to excavation activities identified all underground obstructions (utilities, etc.).
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 1200 gallons of liquid from the UST and its associated piping were transported by Casie Protank to Casie Ecology Oil Salvage, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Vineland, New Jersey. Refer to Appendix C for the waste manifest.

The USTs were cleaned prior to removal from the excavation in accordance with the NJDEP regulations. After the USTs were removed from the excavation, they were staged on polyethylene sheeting and examined for holes. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the USTs were screened visually and with an OVA for evidence of contamination. Soils were stained and appeared to be contaminated. Approximately 92 cubic yards of potentially contaminated soil were removed from the excavated area and transported to the Main Post petroleum contaminated soil holding area. Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length. Groundwater was encountered at 4.0 feet below ground surface and no sheen was observed. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tanks were transported in compliance with all applicable regulations and laws to Marpal Company and Mazza and Sons, Inc., Metal Recyclers. Please refer to Appendix D for the USTs Disposal Certificate and Appendix G for photographs of the tanks.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Former contents
- Destination site
- Date

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observation and TPHC analysis, 92 cubic yards of contaminated soil were removed from the excavation area. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the soil staging area at the Main Post Building. Soils that did not exhibit signs of contamination were used as backfill following the removal of the USTs. Groundwater was encountered at 4.0 feet below ground surface and no sheen was observed.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. The Fort Monmouth DPW Environmental Office maintains all records of the Site Investigation activities.

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: Charles Appleby
Employer: U.S. Army, Fort Monmouth
Phone Number: (908) 532-0989
NJDEP Certification No.: 002056
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental laboratory
Contact Person: Daniel K. Wright
Phone Number: (908) 532-4359
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Casie Protank Environmental Services
Contact Person: Dan Scoleri
Phone Number: (609) 696-4401
NJDEP Company Certification No.: 16931

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank exhibited evidence of potential contamination. Approximately 92 cubic yards of potentially petroleum contaminated soil were removed from the excavated area and transported to the Fort Monmouth petroleum contaminated soil holding area. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was encountered at 4.0 feet below ground surface and no sheen was observed.

2.3 SOIL SAMPLING

On May 15, 1998, following the removal of the UST and associated piping, post-excavation soil samples A, B, C, C2, D, E, and Dup D were collected from a total of six (6) locations of the UST excavation. Sidewall samples A and B were collected at a depth of 4.0 feet bgs. Excavation floor samples C, C2, D, E, and Dup E were collected at depths of 1.0, 2.0, and 3.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

On May 19, 1998, following the removal of approximately 72 cubic yards of potentially contaminated soils, post-excavation soil samples A, B, C, D, E, F, and Dup C were collected from a total of six (6) locations of the UST excavation. Samples A and B were collected from the excavation floor at a depth of 6.5 feet bgs. Sidewall samples C, D, E, and Dup C were collected at a depth of 3.5 feet bgs. Sample F was collected below the sidewalk at a depth of 1.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

On May 22, 1998, following the removal of approximately 5 cubic yards of potentially contaminated soils, post-excavation soil sample A was collected from the excavation floor at a depth of 8.0 feet bgs. Sample A was analyzed for total petroleum hydrocarbons (TPHC) and total solids.

On May 28, 1998, following the removal of approximately 5 cubic yards of potentially contaminated soils, post-excavation soil sample A was collected from the excavation floor at a depth of 8.0 inches bgs. Sample A was analyzed for total petroleum hydrocarbons (TPHC) and total solids.

On November 13, 1999, following the removal of approximately 10 cubic yards of potentially contaminated soils, post-excavation soil samples 1, 2, 3, 4, and Dup 1 were collected from a total of four (4) locations of the UST excavation. Excavation floor samples 1, 2, 3, 4, and Dup 1 were collected at a depth of 2.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

2.4 GROUNDWATER SAMPLING

On November 13, 1999, and January 8, 2000, Building 1107 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*. Refer to Appendix F for the field sampling documentation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the USTs and associated piping, post-excavation soil samples were collected from a total of eighteen (18) locations. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected from the USTs excavation and from below piping associated with the USTs contained concentrations of TPHC below the NJDEP soil cleanup criteria. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 515.73 mg/kg.

3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the samples collected from Building 1107 on November 13, 1999, and January 8, 2000. A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 3 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

Groundwater samples collected on November 13, 1999, and January 8, 2000, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-167 and 233 at Building 1107.

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 1107 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soil with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected at Building 1107 on November 13, 1999, and January 8, 2000, groundwater quality at Building 1107 was either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-167 and 233 at Building 1107.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
C2	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUPD	5/15/98	5/18/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	5/15/98	5/18/98	Soil	Post-excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 2 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
**A	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**F	5/19/98	5/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUPC	5/19/98	5/20/98	Soil	Post-excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 3 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	5/22/98	5/22/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 4 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	5/28/98	5/28/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 5 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
1	11/13/99	11/17/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
2	11/13/99	11/17/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
3	11/13/99	11/17/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
4	11/13/99	11/17/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP 1	11/13/99	11/17/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 1107, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 6 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4936.05	11/13/99	11/15/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
5083.01	1/8/00	1/10/00	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:

*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds

*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds

**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 1107, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 1 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/4.0' =	3570.01	5/15/98	5/18/98	Total Solid	--	--	84.88 %	--	--
				TPHC	184	yes	ND	10,000	No
B/4.0' =	3570.02	5/15/98	5/18/98	Total Solid	--	--	77.69 %	--	--
				TPHC	191	Yes	226.81	10,000	No
C/2.0' =	3570.03	5/15/98	5/18/98	Total Solid	--	--	77.86 %	--	--
				TPHC	192	Yes	516.73	10,000	No
C2/3.5' =	3570.04	5/15/98	5/18/98	Total Solid	--	--	82.58 %	--	--
				TPHC	180	yes	ND	10,000	No
D/10.0" =	3570.05	5/15/98	5/18/98	Total Solid	--	--	85.49 %	--	--
				TPHC	177	Yes	ND	10,000	No
DUPD/10.0" =	3570.06	5/15/98	5/18/98	Total Solid	--	--	85.19 %	--	--
				TPHC	177	Yes	255.04	10,000	No
E/1.0' =	3570.08	5/15/98	5/18/98	Total Solid	--	--	86.68 %	--	--
				TPHC	180	yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 1107, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 2 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
***A/6.5' =	3577.01	5/19/98	5/20/98	Total Solid	--	--	79.62 %	--	--
				TPHC	192	yes	5278.12	10,000	No
B/6.5' =	3577.02	5/19/98	5/20/98	Total Solid	--	--	81.82 %	--	--
				TPHC	185	Yes	ND	10,000	No
C/3.5' =	3577.03	5/19/98	5/20/98	Total Solid	--	--	77.60 %	--	--
				TPHC	196	Yes	ND	10,000	No
D/3.5' =	3577.04	5/19/98	5/20/98	Total Solid	--	--	83.17 %	--	--
				TPHC	185	yes	ND	10,000	No
E/3.5' =	3577.05	5/19/98	5/20/98	Total Solid	--	--	80.90 %	--	--
				TPHC	182	Yes	ND	10,000	No
***F/1.0' =	3577.06	5/19/98	5/20/98	Total Solid	--	--	90.32 %	--	--
				TPHC	164	Yes	24716.19	10,000	Yes
DUPC/3.5' =	3577.07	5/19/98	5/20/98	Total Solid	--	--	79.84 %	--	--
				TPHC	186	yes	ND	10,000	No

Note:

- * Total Solid results are expressed as a percentage.
- ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
- *** Sample location was further remediated and resampled
- ND Not detected above stated method detection limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 1107, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 3 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/8.0' =	3590.01	5/22/98	5/22/98	Total Solid TPHC	-- 204	-- yes	76.16 % 339.25	-- 10,000	-- No

Note:

- * Total Solid results are expressed as a percentage.
 ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
 ND Not detected above stated method detection limit
 TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 1107, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 4 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/8.0"=	3598.01	5/28/98	5/28/98	Total Solid TPHC	-- 172	-- yes	87.58 % ND	-- 10,000	-- No

Note:

- * Total Solid results are expressed as a percentage.
 ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
 ND Not detected above stated method detection limit
 TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 1107, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 5 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
1/2.0' =	4936.01	11/13/99	11/17/99	Total Solid	--	--	86.45 %	--	--
				TPHC	179	yes	417.97	10,000	No
2/2.0' =	4936.02	11/13/99	11/17/99	Total Solid	--	--	92.73 %	--	--
				TPHC	146	yes	267.48	10,000	No
3/2.0' =	4936.03	11/13/99	11/17/99	Total Solid	--	--	92.08 %	--	--
				TPHC	169	yes	188.97	10,000	No
4/2.0' =	4936.04	11/13/99	11/17/99	Total Solid	--	--	86.52 %	--	--
				TPHC	176	yes	214.56	10,000	No
DUP 1/2.0' =	4936.05	11/13/99	11/17/99	Total Solid	--	--	86.73 %	--	--
				TPHC	179	yes	299.55	10,000	No

Note:

* Total Solid results are expressed as a percentage.

** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

TPHC Total Petroleum Hydrocarbons

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 11/13/99Location: 1107Lab Sample ID: 4936.05(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzene	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 11/13/99Location: 1107Lab Sample ID: 4936.05(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 11/13/99Location: 1107Lab Sample ID: 4936.05(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1.83	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.91	Not Detected	--	20	no
62-53-3	Aniline	1.63	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.28	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.19	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.02	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.02	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.13	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.39	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.50	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.97	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.01	Not Detected	--	10	no
78-59-1	Isophorone	1.21	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.75	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.22	Not Detected	--	9	no
91-20-3	Naphthalene	1.27	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.09	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.71	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.08	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.32	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.01	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.79	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.52	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.96	Not Detected	--	nle	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 11/13/99Location: 1107Lab Sample ID: 4936.05(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	--	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	--	10	no
85-01-8	Phenanthrene	1.23	Not Detected	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	--	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[h]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 1/8/00Location: 1107Lab Sample ID: 5083.01(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 1/8/00Location: 1107Lab Sample ID: 5083.01(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 1/8/00Location: 1107Lab Sample ID: 5083.01(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1.83	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.91	Not Detected	--	20	no
62-53-3	Aniline	1.63	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.28	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.19	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.02	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.02	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.13	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.39	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.50	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.97	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.01	Not Detected	--	10	no
78-59-1	Isophorone	1.21	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.75	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.22	Not Detected	--	9	no
91-20-3	Naphthalene	1.27	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.09	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.71	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.08	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.32	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.01	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.79	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.52	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.96	Not Detected	--	nle	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 1/8/00Location: 1107Lab Sample ID: 5083.01(Bldg 1107)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	--	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	--	10	no
85-01-8	Phenanthrene	1.23	Not Detected	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	--	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

FIGURES

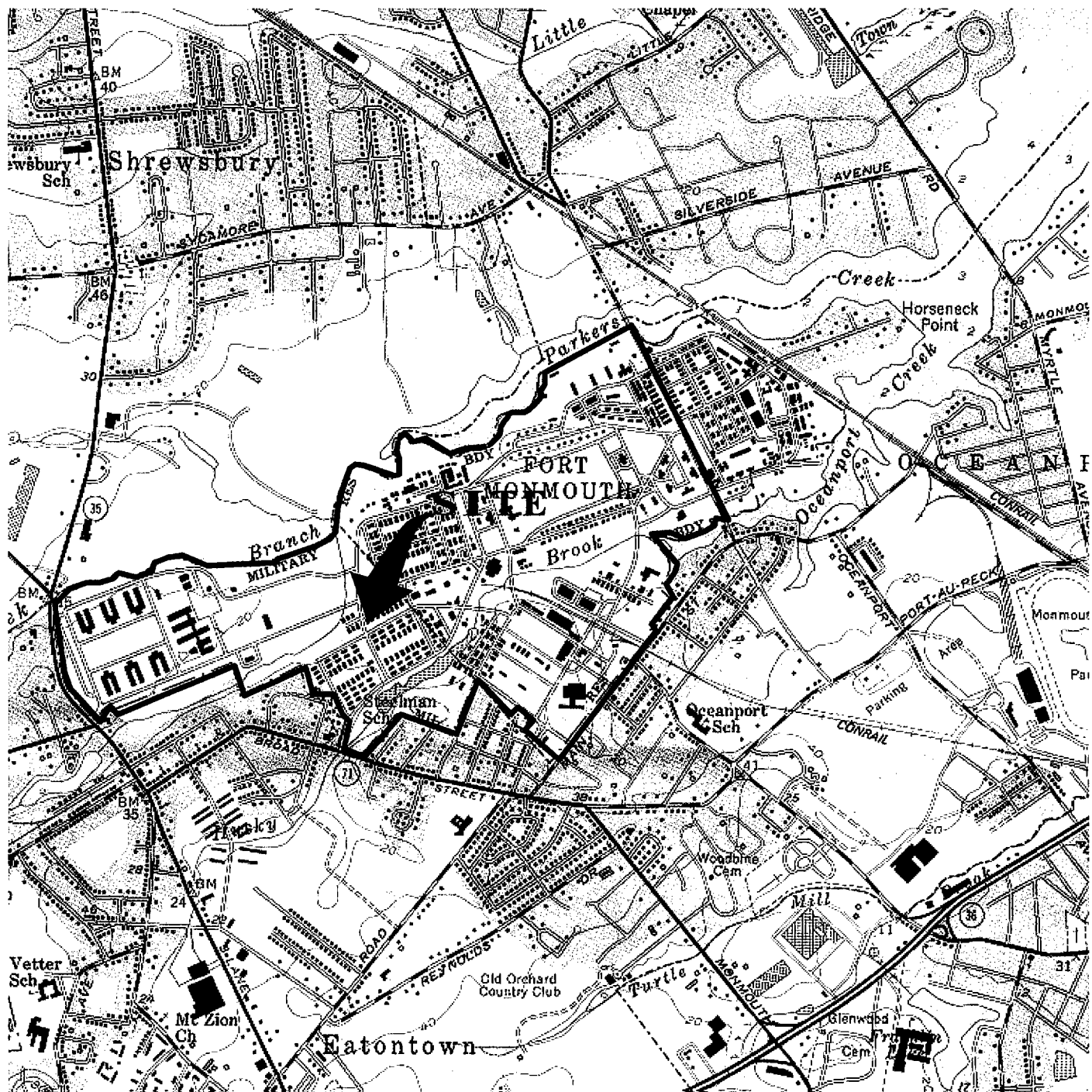


FIGURE 1

LOCATION MAP
 Building 1107
 Main-Post West
 Fort Monmouth Army Base
 Monmouth County, NJ

VERSAR
 Engineers, Managers, Scientists, & Planners
 Bristol, PA

Scale: 1" = 2000'

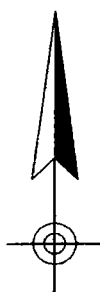
Date: MAY 1998

LONG BRANCH, N. J.
 40073-C8-TF-024

1954
 PHOTOREVISED 1981
 DMA 6164 I SE-SERIES V822



QUADRANGLE LOCATION



Geologic Map of New Jersey

SEDIMENTARY ROCKS

CENOZOIC

Holocene: sand

Tertiary: sand, silt, clay

MESOZOIC

Cretaceous: sand, silt, clay

Jurassic: siltstone, shale, sandstone

Triassic: siltstone, shale,
sandstone

PALEOZOIC

Devonian: conglomerate, sandstone,

Silurian: conglomerate, sandstone,
shale, limestone

Ordovician: shale, limestone

Cambrian: limestone, sandstone

IGNEOUS AND METAMORPHIC ROCKS

MESOZOIC

Jurassic: basalt

Jurassic: diabase

PRECAMBRIAN

marble

gneiss, granite



FIGURE 1A
GEOLOGICAL MAP
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

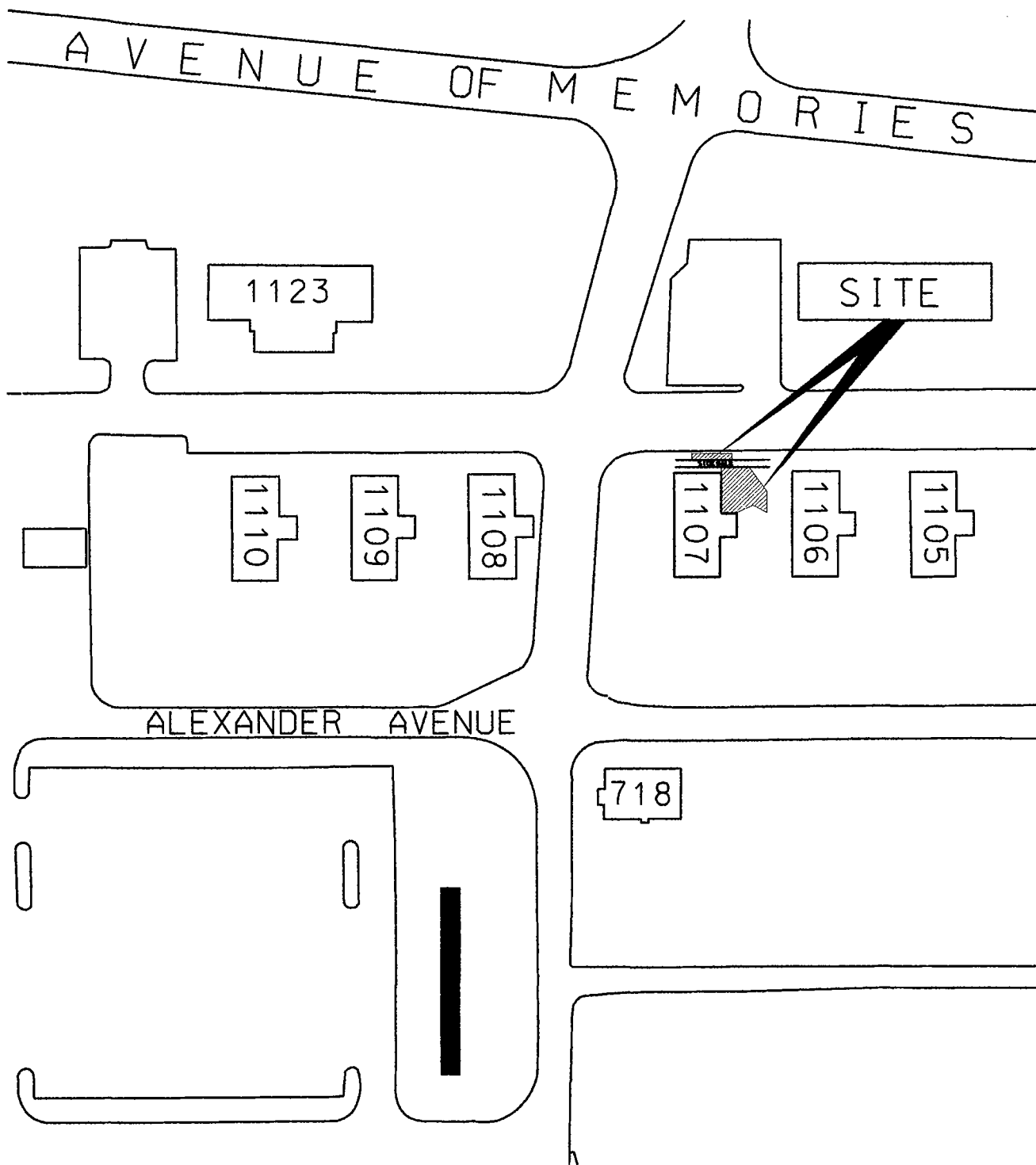
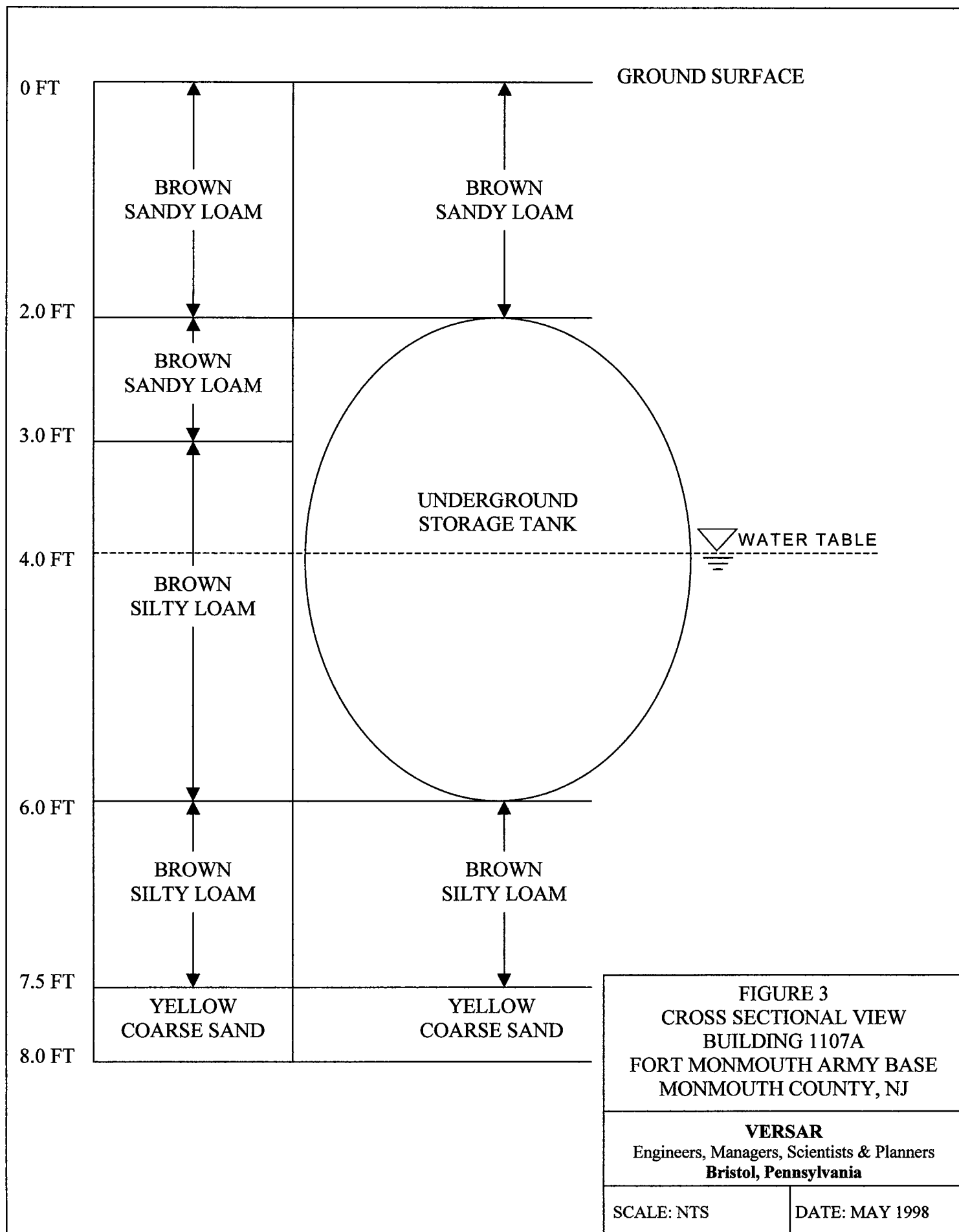


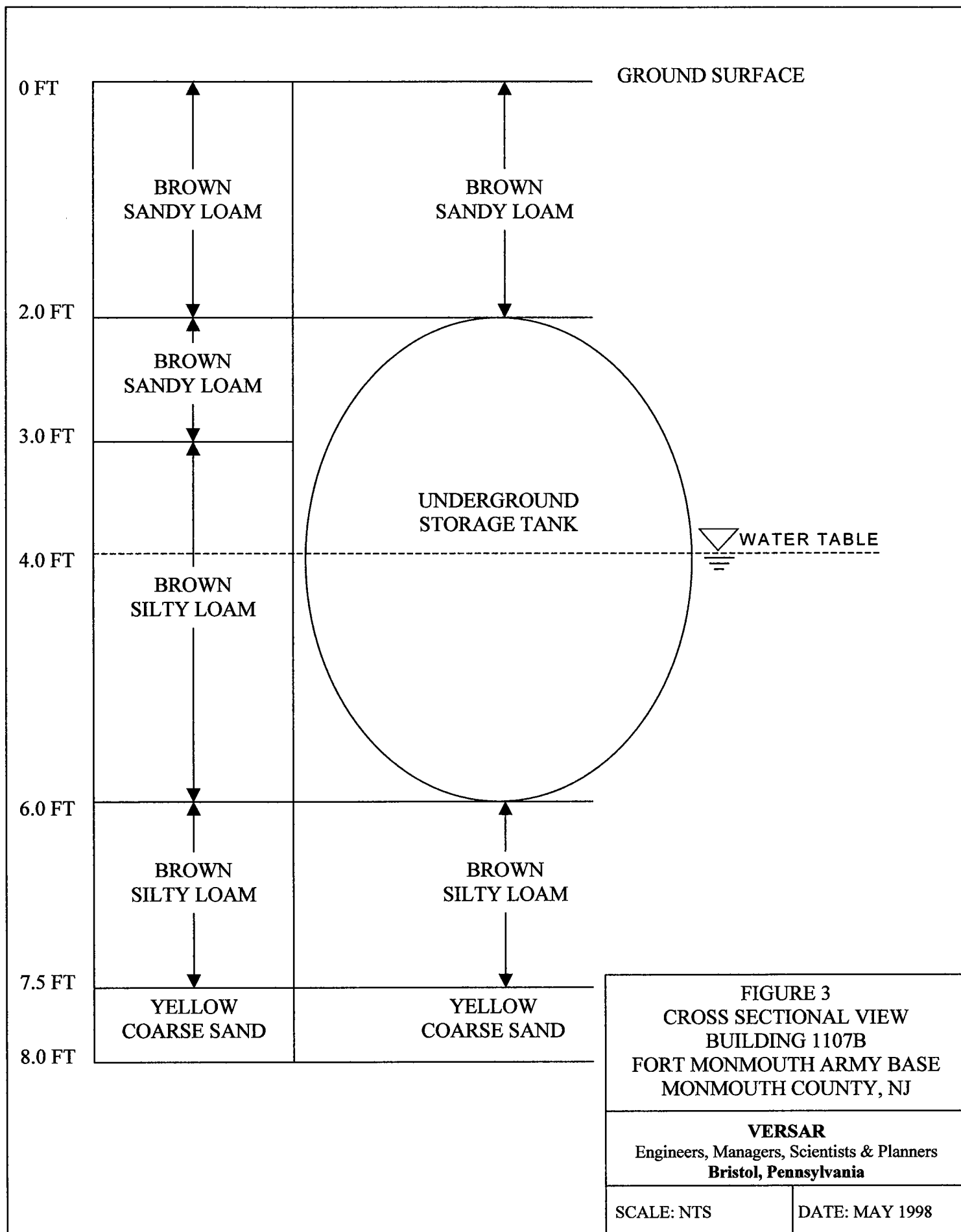
FIGURE 2
 SITE MAP
 BUILDING 1107
 FORT MONMOUTH ARMY BASE
 MONMOUTH COUNTY, NJ

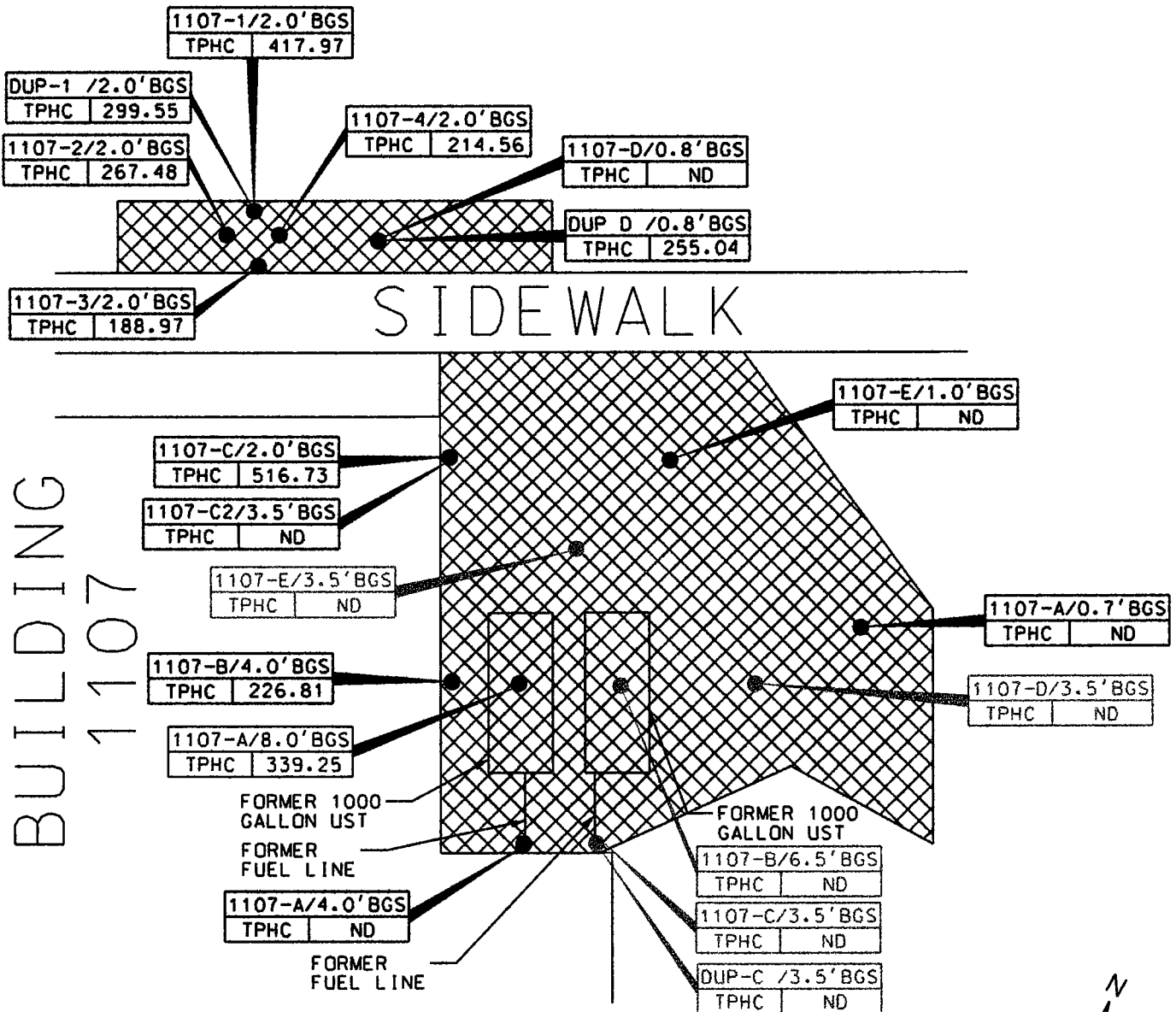
VERSAR
 ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
 BRISTOL, PA.

SCALE: 1"=100'

DATE: MAY 1998







LEGEND

- SOIL SAMPLE LOCATION (MAY 15, 1998)
- SOIL SAMPLE LOCATION (MAY 19, 1998)
- SOIL SAMPLE LOCATION (MAY 22, 1998)
- SOIL SAMPLE LOCATION (MAY 28, 1998)
- SOIL SAMPLE LOCATION (NOVEMBER 13, 1999)

▨ LIMIT OF EXCAVATION (MAY 28, 1998)

NOTES:

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

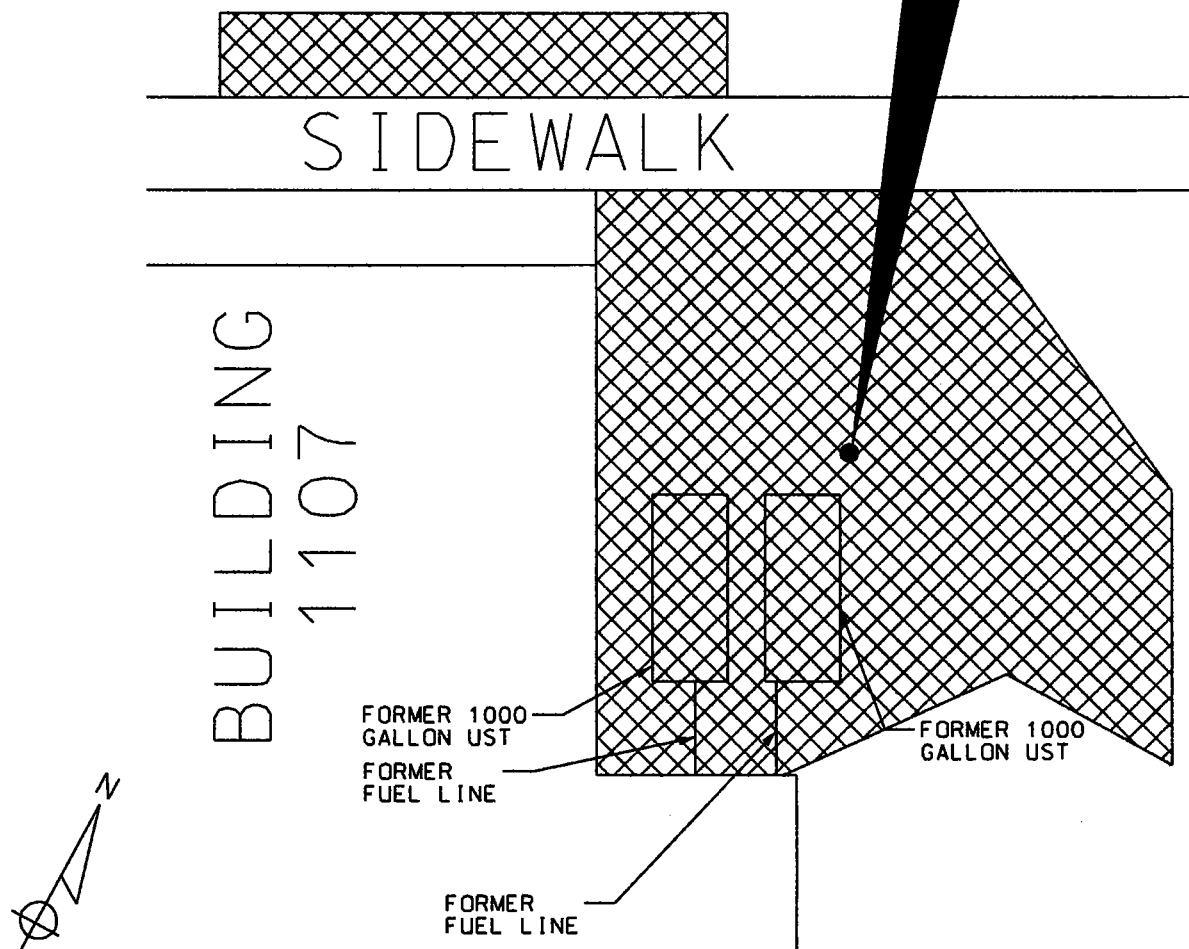
FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 1107
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10'

DATE: MAY 1998

SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWQS AND PQL	BLDG 1107 5.0-9.0' BGS 11/13/99	BLDG 1107 10-15' BGS 1/8/00
VOLATILE ORGANIC COMPOUNDS:		ND	ND
SEMIVOLATILE ORGANIC COMPOUNDS:		ND	ND



LEGEND

- GROUNDWATER SAMPLE LOCATION
(NOVEMBER 13, 1999 AND JANUARY 8, 2000)
- ▨ LIMIT OF EXCAVATION
(MAY 28, 1998)

NOTES:

1. ND=INDICATES COMPOUND NOT DETECTED
2. NLE= NO LIMIT ESTABLISHED
3. ALL RESULTS IN UG/L
4. BGS = BELOW GROUND SURFACE

FIGURE 5
GROUNDWATER SAMPLING MAP
BUILDING 1107
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10'

DATE: MAY 1998

APPENDIX A

NJDEP-STANDARD REPORTING FORM

COPY

FOR STATE USE ONLY

Check In ☐ Yes ☐ No

STATUS Active Inactive COMCODE
☐ ☐ ☐ ☐ ☐

UNDERGROUND STORAGE TANK
FACILITY QUESTIONNAIRE

FACILITY UST # 0081533

main Post West Bldg 1107A + B (New Reg)

Completion of this Registration Questionnaire will satisfy the registration requirements of the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21, and the Registration and Billing Regulations N.J.A.C. 7:14B-2.

[Check appropriate box(es)]

- A. ☐ Is this a registration of a proposed or newly installed underground storage tank? (This form must be filed at least 30 days prior to operation)
B. ☒ Is this a registration of an existing underground storage tank not presently registered?
C. ☒ Is this a correction or amendment to an existing facility registration? UST # 0081533
D. ☐ There have been no changes to the facility registration since last submittal. UST # _____ (Go to certification page for signatures)

If "C" is checked above, please check the appropriate type of change(s) below

- | | | |
|--|---|--|
| ☐ Facility Name and/or Address Change | ☐ Type of Product(s) Stored | ☐ Financial Responsibility Change |
| ☐ Owner Name and/or Address Change | ☐ Spills, Leaks, Releases | ☐ Substantial Modification(s) |
| ☐ Facility Operator and/or Address Change | ☐ Tank(s) and/or Piping Changes | ☐ Sale or Transfer (Complete Questions 4,5,6 & 13D) |
| ☐ Owner Contact Person Change | ☒ Closure (Complete Question #13) | ☐ Other (please specify) |

SECTION A - GENERAL FACILITY INFORMATION

1. Facility Name Ft. Marmarth

2. Facility Location MAIN POST WEST

NUMBER AND STREET

CITY OR MUNICIPALITY

COUNTY

STATE N.J.

ZIP CODE

BLOCK

LOT

3. Facility Operator _____ Contact Tele. No. _____
PERSON OR TITLE (Area Code) (Extension)

Operator Address (if different than #2) _____
NUMBER AND STREET

CITY OR MUNICIPALITY

STATE

ZIP CODE

4. Tank Owner _____

5. Tank Owner Address _____
NUMBER AND STREET

CITY OR MUNICIPALITY

STATE

ZIP CODE

Contact Person (Tank Owner) _____ Contact Tele. No. _____
(Area Code) (Extension)

6. EPA ID # _____

7. Total number of regulated underground storage tanks at facility _____ (Complete Section B for each tank)

10. Facility Type: A ☐ State C ☐ County/Municipal E ☐ Charitable / Public School G ☐ Other
B ☐ Commercial/ D ☐ Federal F ☐ Residence H ☐ Farm (as defined in N.J.S.A.
Industrial 54:4-23.1 et seq.)

11. Is a copy of the facility site plan submitted with this registration pursuant to N.J.A.C. 7:14B-2? ☐ YES ☐ NO

ALL underground tanks, including those taken out of operation (UNLESS THE TANK WAS REMOVED FROM THE GROUND PRIOR TO 9/3/86) must be registered. Report all tank/piping status changes unless previously submitted.

Tank Identification Number	TANK NO.	TANK NO.	TANK NO.	TANK NO.
CAS Number (hazardous substances only)				
Date Tank Installed (Month/Day/Year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
Tank Size (gallons)				
Tank Contents (Mark one "X" for each tank)				
A. Lead gasoline				
B. Unleaded gasoline				
C. Alcohol enriched gasoline				
D. Light diesel fuel (No. 1-D)				
E. Medium diesel fuel (No. 2-D)				
F. Waste Oil				
G. Kerosene (No. 1)				
H. Home heating oil (No. 2)	X			
J. Heating oil (No. 4)				
K. Heavy heating oil (No. 6)				
L. Aviation fuel				
M. Motor oil				
N. Lubricating oil				
P. Sewage				
Q. Sewage sludge				
R. Other hazardous substances (specify)				
S. Hazardous waste (specify ID number)				
T. Mixtures (please specify)				
U. Emergency spill tank (specify substance)				
V. Other petroleum products (please specify)				
W. Other (please specify)				
Tank & Piping Construction (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Bare Steel	[X] [X]			
B. Cathodically protected steel				
C. Fiberglass-coated steel				
D. Fiberglass-reinforced plastic				
E. Internally lined				
F. Other (please specify)				
Tank & Piping Structure (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Single wall	[X] [X]			
B. Double wall				
C. Other (please specify)				
Type of Monitoring/Detection System (Mark all that apply for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Statistical Inventory Reconciliation				
B. Manual Tank Gauging				
C. Inventory Control				
D. Interstitial				
E. Precision Test				
F. Ground water observation wells				
G. Vapor observation wells				
H. In-tank (automatic) monitoring gauge				
I. Periodic Tank Test				

Tank Identification Number	TANK NO. 233	TANK NO.	TANK NO.	TANK NO.	TANK NO.
8. Type of Monitoring/Detection System K. None L. Other (please specify)	Tank Piping ☒ ☒	Tank Piping ☐ ☐	Tank Piping ☐ ☐	Tank Piping ☐ ☐	Tank Piping ☐ ☐
9. Overfill Protection (tank only) (Mark one X for each tank)					
A. Yes	☐	☐	☐	☐	☐
B. No	☒	☐	☐	☐	☐
10. Spill Containment Around Fill Pipe (Mark one X for each tank)					
A. Yes	☐	☐	☐	☐	☐
B. No	☒	☐	☐	☐	☐
11. Tank Status (Mark one X for each tank)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. In-use	☐	☐	☐	☐	☐
B. Empty less than 12 months	☐	☐	☐	☐	☐
C. Empty 12 months or more	☐	☐	☐	☐	☐
D. Emergency spill tank (sump)	☐	☐	☐	☐	☐
E. Emergency backup generator tank	☐	☐	☐	☐	☐
F. Abandoned in Place	☐	☐	☐	☐	☐
G. Removed	☒	☒	☐	☐	☐
H. Other (please specify)	* (5/12/98 Discharge # 98-05-12-0151-41)				
12. If box 11B, C, or D above has been marked, indicate the estimated date last used (month/day/year)	Mo. Day Year 9/10/1985	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
13. Closure Information - Tank ID No. A	TANK NO. 167	TANK NO.	TANK NO.	TANK NO.	TANK NO.
	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
A. Date abandoned in place					
B. Date taken temporarily out of service					
C. Date removed	05/18/1998				
D. Date of Sale or Transfer					
E. TMS # (if applicable)	Fed. Case Mgr.				
F. ISRA # (if applicable)					

SECTION C - FINANCIAL RESPONSIBILITY

Does this facility have a Financial Responsibility Assurance Mechanism as required in 40 CFR 280? ☐ YES ☐ NO
Please list the appropriate financial information below:

Type	Carrier / Issuing Agency
Effective Date	Expiration Date
Policy Number	Amount

SECTION D - MONITORING SYSTEMS

Does this facility have a release detection monitoring system which is in compliance with N.J.A.C. 7:14B-6?
If "No", please be aware that the facility must meet the appropriate deadline. (See "Dates to Know" on Page 4)

☐ YES ☐ NO

SECTION E - RECORDKEEPING/COMPLIANCE

Please answer all the questions in this section on a facility basis. Any one tank not in compliance requires a "NO" answer for the entire facility.

- Does this facility have cathodic protection systems for all steel tanks and piping?
If "Yes", are the systems properly operated and maintained pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
- Are the performance claims and documentation of monitoring systems maintained by the owner or operator pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
- Are the proper monitoring, testing, sampling, repair and inventory records kept on-site pursuant to N.J.A.C. 7:14B-5 and 6? ☐ YES ☐ NO
- Is the proper Release Response Plan kept on-site pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
- Does the facility have spill and over fill protection systems pursuant to N.J.A.C. 7:14B-4? ☐ YES ☐ NO
- Have all Fill Ports been permanently marked as per API #1637 pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO

IMPORTANT INFORMATION

- FEE:** Please make checks payable to: "Treasurer, State of New Jersey". Use of the enclosed return envelope will expedite processing. Registration and Billing Schedule can be found in N.J.A.C. 7:14B.
All Initial Registration fees are \$100 per facility.
- PENALTY:** Failure by owner or operator of a regulated underground storage tank to comply with any requirement of the State UST Act or regulations may result in the penalties set forth in N.J.S.A. 58:10A-10.
- EMERGENCY:** If a discharge or spill occurs, the NJDEP Hotline at (609) 292-7172 must be called IMMEDIATELY - 24 hours a day.
- UPGRADE EXEMPTION:** Residential heating oil underground storage tanks are exempt from all upgrade requirements.

DATES TO KNOW (critical deadlines)

- December 22, 1988 — All new federally regulated tank systems must have cathodic protection and spill/overflow protection.
- September 4, 1990 — All new State-only regulated tank systems must have cathodic protection and spill/overflow protection.
- December 22, 1990 — All federally regulated piping must have begun leak detection.
- February 19, 1993 — All federally regulated tank systems must maintain financial responsibility assurance.
- December 22, 1993 — All federally regulated tank systems must have begun leak detection.
- December 22, 1998 — All regulated tanks shall install cathodic protection and spill/overflow protection.

CERTIFICATIONS

NOTE: IF THE PERSON SIGNING CERTIFICATION NO. 2 IS THE SAME AS THE PERSON SIGNING CERTIFICATION NO. 1, THEN CERTIFICATION NO. 2 NEED NOT BE SIGNED. (If different persons are required to sign No. 1 and No. 2, then they must do so.)

CERTIFICATION NO. 1:

Must be signed by the highest ranking individual at the facility with overall responsibility

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

MR. James OTT

(Typed / Printed Name)

Director Public Works

(Title)

[Signature]

(Signature)

5/18/98

(Date)

CERTIFICATION NO. 2:

Must be signed as follows:

- For a corporation, by a principal executive officer of at least the level of vice president
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively
- For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official
- For persons other than indicated above, by the person with legal responsibility for the site

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

(Typed / Printed Name)

(Signature)

(Title)

(Date)

CERTIFICATION NO. 3:

If applicable, must be signed by the individual who is certified to perform services.

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

CHARLES APPLEBY

ENVIRONMENTAL PROTECTION SPEC.

(Typed / Printed Name)

(Title)

U.S. Army

(Name of Firm, if applicable)

[Signature]

(Signature)

5/18/98

(Date)

UST

2056

(N.J. Certification Number)

APPENDIX B

SITE ASSESSMENT SUMMARY

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New JerseyFacility Street Address : Directorate of Public Works Building 173Municipality: Oceanport County: MonmouthBlock: _____ Lot(s): _____ Telephone Number : 732-532-6224**B. Owner (RP)'s Name:** _____

Street Address: _____ City: _____

State: _____ Zip: _____ Telephone Number : _____

C. (Check as appropriate)☐ Site Investigation

Report (SIR) \$500 Fee

☐ Remedial Investigation

Report (RIR) \$1000 Fee

☒ NA – Federal Agreement**D. (Complete all that apply)**• Assigned Case Manager : Ian Curtis, Federal Case Manager• UST Registration Number : 81533-167 and 233 (7 digits)• Incident Report Number 98 – 05 – 12 – 0151 – 41 (10 or 12 digits)• Tank Closure Number : Federal Case Manager**E. Certification by the Subsurface Evaluator:**

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E Yes No

Name: Charles Appleby Signature: See signed subsurface removal log UST Cert. No.: 2056Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA-U.S. ArmyFirm Address: Directorate of Public Works Building 173 City: Fort MonmouthState: NJ Zip: 07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)] as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): James OttTitle: Directorate of Public Works

Signature: _____

Company Name: U.S. Army Fort MonmouthDate: 9/4/00

US ARMY, SELFM-PW-EV

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 1107 A+B REG.#: 81533 - 167 CLOSURE#: _____
 DATE: 5/19/98 TOA: 11 AM TOD: _____
 GOV. SSE: Charles Appleby NJDEP CERT.#: 2056
 REMOVAL CONTRACTOR: _____
 CLOSURE SUPERVISOR: Greg DeMartino NJDEP CERT.#: _____
 WEATHER: Sunny & Warm ~80°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	<u>YES</u>
THE SSE WAS ON-SITE DURING UST REMOVAL AND <u>SITE SCREENING AND SAMPLING ACTIVITIES</u>	<u>YES</u>
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR) <u>JUS</u>	<u>YES</u>
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	<u>NA</u>
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	<u>NA</u>
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# <u>Rpt 8/2/98</u>	<u>OK</u>
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK <u>JUS</u>	<u>YES</u>
GROUNDWATER WAS ENCOUNTERED AT <u>4</u> FEET BG, A SHEEN (WAS <u>NOT</u>) OBSERVED ON GW	
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC) <u>JUS</u>	<u>YES</u>
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN) <u>JUS</u>	<u>YES</u>
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	<u>YES</u>
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA <u>FD</u> RECORDED SITES IAW 7:26E-3.6 et seq.	<u>YES</u>
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	<u>NA</u>
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS ³), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	

CHECK ALL BOXES, LEAVE NO BLANK

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: _____

ca\ms\ust\removal\sitessls.doc

- Hot Area Below Side Walk Take

direct - Base & Side Wall Safety - Gas observed & authorized @ 4' & 6' & 8'

APPENDIX C

WASTE MANIFEST

CASIE / PROTANK

ENVIRONMENTAL SERVICES

1107

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NJ 02100205971		2. Page 1 of 1	
3. Generator's Name and Mailing Address Main Post ATTN: SELFM-PO-EV c/o Joe Fallon/Bldg Fort Monmouth NJ 07703		A. Non-hazardous Manifest Document Number NH2020 17382		B. State Generator's ID SAME	
4. Generator's Phone (732) 532-6223		C. State Trans. ID 16931		D. Transporter's Phone ((609) 696-4401	
5. Transporter 1 Company Name Casie Ecology Oil Salvage, Inc. NJ 045995693		E. State Trans. ID X015976		F. Transporter's Phone ()	
6. US EPA ID Number		G. State Facility 0814D1HP05		H. Facility's Phone ((609) 696-4401	
7. Transporter 2 Company Name		I. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers	
8. US EPA ID Number		13. Total Quantity		14. Unit Wt/Vol	
9. Designated Facility Name and Site Address Casie Ecology Oil Salvage, Inc. T/A 3209 N. Mill Rd / Casie Protank Vineland NJ 08360 NJ 045995693		10. US EPA ID Number		L Waste No.	
GENERATOR	a.	Combustible liquid, n.o.s. (Fuel Oil) NA1993, PGIII	001	T	1990
	b.				
	c.				
	d.				
	J. Additional Descriptions for Materials Listed Above L 90% oil/sed. 10% wtr.	K. Handling Codes for Wastes Listed Above			
a.	c.	a.	c.		
b.	d.	b.	d.		
15. Special Handling Instructions and Additional Information a. 24 Hr. Emergency Response #609 696-4401 K. Ambrosia ERG# 128					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.					
Printed/Typed Name Joseph M. Fallon			Signature Joseph M. Fallon		
17. Transporter 1 Acknowledgement of Receipt of Materials			Month Day Year 10/4/30/98		
Printed/Typed Name Don Scoler			Signature Don Scoler		
18. Transporter 2 Acknowledgement of Receipt of Materials			Month Day Year 10/4/30/98		
Printed/Typed Name			Signature		
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name			Signature		
			Month Day Year		

1-GENERATOR COPY

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES

Metal Recyclers
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

NO. 295

DATE. 23-June 98

B. 1107

Customer's Name 14 COM ULLIN LLC

Address _____

Cast Iron	
Steel	
<i>Test with</i>	<i>50.6</i>
Lt. Iron	
Copper #1	
Copper #2	

14780 LB

13140 LE

7810

JUN 23 1970

OK 1928

Lt. Copper
Brass
Alum Clean
Lead
Stainless
Battery
\$ 50. ⁶⁰ / ₁₀₀
TOTAL AMOUNT:

\$ 50.60

TOTAL AMOUNT:

Weigher _____

Customer *[Signature]*

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.		AMOUNT
DATE		
<i>scribble</i>		
TOTAL OF INVOICES		
LESS	% DISCOUNT	
LESS FREIGHT		
LESS		
TOTAL DEDUCTIONS		
AMOUNT OF CHECK		

B.1107

MAZZA & SONS, INC.
RECYCLING DIVISION
P.O. BOX 246
OAKHURST, NJ 07755

1928

DATE 6-23-98 55-7233/2212

**PAY
TO THE
ORDER OF**

TeCominnell

\$ 50.60

24

60/00

—DOLLARS Security features included. Details on back.

Sovereign Bank

1100192811 1:221.272332:000 109109928211

07/10/98 14:41 FAX 908 542 4402

MARPAL COMPANY

002


**MONMOUTH COUNTY
RECLAMATION CENTER**

TINTON FALLS, NJ

 MAILING ADDRESS: 6000 ASBURY AVE.
NEPTUNE, NJ 07753

CUSTOMER COPY

FACILITY I.D. NO. 1336F1SP01

RECEIPT DOCUMENT NUMBER

B
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 MARP508937
MARPAL COMPANY
PO BOX 188

LINCROFT

NJ 07738

H
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L
E
R
 MARP508937
MARPAL COMPANY
PO BOX 188

LINCROFT NJ 07738

Escrow Level: 2400.00

01706023

DATE	ENTRY TIME	OPER	EXIT TIME	OPER	GROSS WEIGHT	TARE WEIGHT	NET WEIGHT
07/10/98	08:08	VJF	08:31	PMN	(44800 LB)	(37280 LB)	(7520 LB)
00856356	Scale 02		Scale 04		Scale 02	Scale 04	
					(22.40 T)	(18.64 T)	(3.76 T)

VEHICLE NUMBER	VEHICLE TYPE	PLATE NUMBER	TRANSACTION TYPE
2065AU	Rolloff Open	XX89HD	TUS (166) Normal

QUANTITY	WC	DESCRIPTION/ORIGIN	UNITS	UNIT PRICE	AMOUNT
3.7600	136	Bulky Waste - (MCRC) MONMOUTH COUNTY EATONTOWN BOROUGH	Tons 100.00%	88.15	331.44

I hereby certify that the information provided on this form is true to the best of my knowledge.

*** Prepayment Balance Remaining: 28628.86

DRIVER NAME

PRINT

R. Jacques

SIGNATURE

DOCUMENT
TOTAL

331.44

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 1107

Project # 3570
Date Rec. 05/15/98
Date Compl. 05/20/98
Released by:



Daniel K. Wright
Laboratory Director

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Raw Sample Data	12-25
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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	—	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	—
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	—	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	—	✓
5. IR Spectra submitted for standards, blanks, & samples	—	NA —
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	—	✓
7. Analysis holding time met.	—	✓
(If not met, list number of days exceeded for each sample)		
Additional Comments:		

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

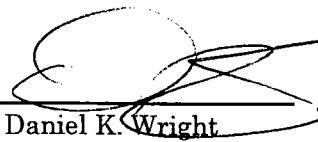
Customer: C. Appleby - DPW		Project No: 98-0001		Analysis Parameters								Comments:		
Phone #: 26224		Location: B. 1107										* = SAMPLES KEPT BELOW 4°C.		
() DERA (X) OMA () Other:														
Samplers Name / Company: GARY DiMARTINIS-TLS				Sample	#									Remarks / Preservation Method
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles	TPH	CO SOLIDS	MUNSELL	VOA+15	TO BE DETERMINED	OVA			
3570.01	1107-A	5-15-98	1054	SOIL	2	X	X	X	X			10	SIDE WALL @ 4.0' *	
02	B		1035		2							1	↓	
03	C		1045		2							5	EXC. FLOOR @ 2.0'	
04	C2		1041		2				↓			NO	EXC. FLOOR @ 3.5'	
05	D		1022		1							NO	EXC. FLOOR @ 10"	
06	DUP		—	↓	1	↓	↓	↓				—	FIELD DUPLICATE	
07	TB	↓	—	METHANOL	1				X			—	TRIP BLANK ↓	
08	E	↓	1430	SOIL	1	X	X	X					EXC. FLOOR @ 1.0' ↓	
NOTE: OVA (#452114) CALIBRATED W/95 ppm CH ₄ + ZERO (0) AIR @ 1000 HRS. ON 5-15-98 by G. DiMARTINIS.														
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):				
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):				
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified						Remarks: DEDICATED SAMPLING TOOLS USED.								
Turnaround time: () Standard 4 wks, (X) Rush 2 Days, () ASAP Verbal ___ Hrs.														

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	Lab. ID #:	3570
	DPW. SELFM-PW-EV	Date Rec'd:	15-May-98
	Bldg. 173	Analysis Start:	18-May-98
	Ft. Monmouth, NJ 07703	Analysis Complete:	20-May-98
Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	
Analyst:	D.DEINHARDT	DICAR #:	
Ext. Meth:	Shake	Location #:	B. 1107

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3570.01	1107-A	1.00	15.05	84.88	184	ND
3570.02	1107-B	1.00	15.87	77.69	191	226.81
3570.03	1107-C	1.00	15.73	77.86	192	516.73
3570.04	1107-C2	1.00	15.85	82.58	180	ND
3570.05	1107-D	1.00	15.49	85.49	177	ND
3570.06	1107-DUP	1.00	15.58	85.19	177	255.04
3570.08	1107-E	1.00	15.05	86.68	180	ND
METHOD BLANK	TBLK 100	1.00	15.00	100.00	157	ND

ND = Not Detected
MDL = Method Detection Limit


Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT
AND ACCOMPANY ALL DATA SUBMISSIONS

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It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- | | |
|--|-------------------------------------|
| 1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted | ☒ |
| 2. Table of Contents submitted | ☒ |
| 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted | ☒ |
| 4. Document paginated and legible | ☒ |
| 5. Chain of Custody submitted | ☒ |
| 6. Samples submitted to lab within 48 hours of sample collection | ☒ |
| 7. Methodology Summary submitted | ☒ |
| 8. Laboratory Chronicle and Holding Time Check submitted | ☒ |
| 9. Results submitted on a dry weight basis | ☒ |
| 10. Method Detection Limits submitted | ☒ |
| 11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP | ☒ |

Laboratory Manager or Environmental Consultant's Signature

Date 6/11/96

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

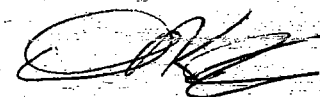
US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 1107

Project # 3577
Date Rec. 05/19/98
Date Compl. 05/20/98
Released by:



Daniel K. Wright
Laboratory Director

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Quality Control Spike Summary	12
Raw Sample Data	13-26
Laboratory Deliverable Checklist	27

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

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The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	<u>—</u>	<u>✓</u>
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank. _____ _____	<u>✓</u>	<u>—</u>
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). * 3577.01 ms 25% Matrix interference	<u>✓</u>	<u>—</u>
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). * 3577.01 70% Matrix interference	<u>✓</u>	<u>—</u>
5. IR Spectra submitted for standards, blanks, & samples	<u>—</u>	<u>NA</u>
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	<u>—</u>	<u>✓</u>
7. Analysis holding time met. (If not met, list number of days exceeded for each sample) _____ _____	<u>—</u>	<u>✓</u>
Additional Comments: _____ _____ _____		

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: <u>C. Appleby-DPW</u>		Project No: <u>98-0001</u>		Analysis Parameters								Comments:			
Phone #: <u>26224</u>		Location: <u>B. 1107</u>		TPHC O₂ SOLIDS MUNNELL								* = SAMPLES KEPT BELOW 4°C.			
() DERA (X) OMA () Other: _____															
Samplers Name / Company: <u>GARY DiMARTINIS-TUS</u>				Sample #									Remarks / Preservation Method		
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles										
3577.01	1107-A	5-19-98	1109	SOIL	1	X	X	X						25	EXC. FLOOR @ 6.5' *
02	B		1118											ND	↓
03	C		1123											ND	SIDEWALL @ 3.5'
04	D		1130											ND	↓
05	E		1134											ND	↓
06	F		1311											10	1.0' DEPTH BELOW SIDEWALL
07	DUP	↓	—	↓	↓	↓	↓	↓						—	FIELD DUPLICATE ✓
NOTE: OVA (#A52114) CALIBRATED w/ 95 ppm CH ₄ + ZERO O ₂ AIR @ 1100 AM. ON 5/19/98 by G. DiMARTINIS															
Relinquished by (signature): <u>[Signature]</u>		Date/Time: <u>5-19-98 1340</u>		Received by (signature): <u>[Signature]</u>		Relinquished by (signature):		Date/Time:		Received by (signature):					
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):					
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified								Remarks: <u>DEDICATED SAMPLING TOOLS USED.</u>							
Turnaround time: () Standard 4 wks, (X) Rush <u>2</u> Days, () ASAP Verbal _____ Hrs.															

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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- | | |
|--|-------------------------------------|
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| 2. Table of Contents submitted | ☒ |
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| 4. Document paginated and legible | ☒ |
| 5. Chain of Custody submitted | ☒ |
| 6. Samples submitted to lab within 48 hours of sample collection | ☒ |
| 7. Methodology Summary submitted | ☒ |
| 8. Laboratory Chronicle and Holding Time Check submitted | ☒ |
| 9. Results submitted on a dry weight basis | ☒ |
| 10. Method Detection Limits submitted | ☒ |
| 11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP | ☒ |

Laboratory Manager or Environmental Consultant's Signature

Date 6/16/93

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 1107

Project # 3590
Date Rec. 05/22/98
Date Compl. 05/22/98
Released by:



Daniel K. Wright
Laboratory Director

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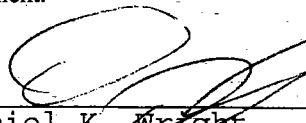
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PHC Conformance/Non-conformance Summary Report

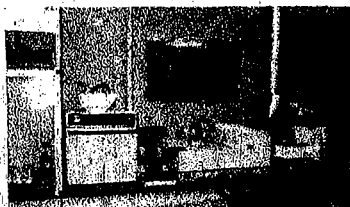
	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	<u>—</u>	<u>✓</u>
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank. _____ _____	<u>✓</u>	<u>—</u>
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5. IR Spectra submitted for standards, blanks, & samples	<u>—</u>	<u>NA</u>
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	<u>—</u>	<u>✓</u>
7. Analysis holding time met. (If not met, list number of days exceeded for each sample) _____ _____	<u>—</u>	<u>✓</u>
Additional Comments: _____ _____ _____		

Laboratory Authentication Statement

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Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

[illegible]

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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- | | |
|--|-------------------------------------|
| 1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted | ☒ |
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| 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted | ☒ |
| 4. Document paginated and legible | ☒ |
| 5. Chain of Custody submitted | ☒ |
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| 9. Results submitted on a dry weight basis | ☒ |
| 10. Method Detection Limits submitted | ☒ |
| 11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP | ☒ |

Laboratory Manager or Environmental Consultant's Signature _____
Date 6/16/95

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0001
Bldg_1107

Project # 3598
Date Rec. 05/28/98
Date Compl. 05/29/98
Released by:



Daniel K. Wright
Laboratory Director

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Method Summary

NJDEP Method OQA-OAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

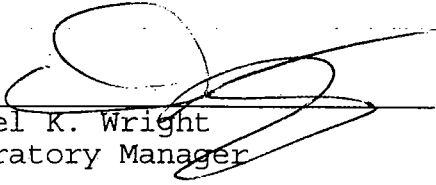
PHC Conformance/Non-conformance Summary Report

	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	—	☒
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	☒	—
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	—	☒
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	—	☒
5. IR Spectra submitted for standards, blanks, & samples	—	NA
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	—	☒
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)	—	☒

Additional Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager



Tel (732)532-4359 Fax (732)532-3484 EMail: appleby@doim6.monmouth.army.mil

Chain of Custody Record

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- | | |
|--|-------------------------------------|
| 1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted | ☒ |
| 2. Table of Contents submitted | ☒ |
| 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted | ☒ |
| 4. Document paginated and legible | ☒ |
| 5. Chain of Custody submitted | ☒ |
| 6. Samples submitted to lab within 48 hours of sample collection | ☒ |
| 7. Methodology Summary submitted | ☒ |
| 8. Laboratory Chronicle and Holding Time Check submitted | ☒ |
| 9. Results submitted on a dry weight basis | ☒ |
| 10. Method Detection Limits submitted | ☒ |
| 11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP | ☒ |

Laboratory Manager or Environmental Consultant's Signature

Date 6/16/94

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: UST Program

Bldg. 1107

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1107-1 2'	4936.01	Soil	13-Nov-99 11:43	11/15/99
1107-2 2'	4936.02	Soil	13-Nov-99 11:48	11/15/99
1107-3 2'	4936.03	Soil	13-Nov-99 11:52	11/15/99
1107-4 2'	4936.04	Soil	13-Nov-99 11:58	11/15/99
1107-GW-5-9'	4936.05	Aqueous	13-Nov-99 12:00	11/15/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15, TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

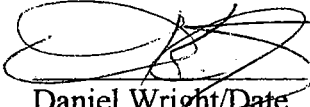
 4-7-00
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

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NJDEP Certification #13461

Chain of Custody Record

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TPHC

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Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client : U.S. Army
DPW. SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab. ID # : 4936
Date Rec'd: 15-Nov-99
Analysis Start: 17-Nov-99
Analysis Complete: 17-Nov-99

Analysis: OQA-QAM-025
Matrix: Soil
Analyst: B.Patel
Inst. ID. GC TPHC INST. #1
Column Type RTX 5
Ext. Meth: Shake

UST Reg. #:
Closure #:
DICAR #:
Injection Volume 1 ul
Column ID 0.32 mm
Location #: Bldg. 1107

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4936.01	1107-1	1.00	15.21	86.45	179	417.97
4936.02	1107-2	1.00	17.32	92.73	146	267.48
4936.03	1107-3	1.00	15.14	92.08	169	188.97
4936.04	1107-4	1.00	15.40	86.52	176	214.56
4936.06	Field Dup	1.00	15.16	86.73	179	299.55
METHOD BLANK	TBLK283	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit


Daniel K. Wright
Laboratory Director

000066

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

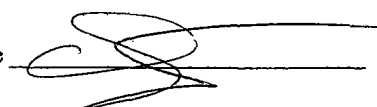
It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted
2. Table of Contents submitted
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted
4. Document paginated and legible
5. Chain of Custody submitted
6. Samples submitted to lab within 48 hours of sample collection
7. Methodology Summary submitted
8. Laboratory Chronicle and Holding Time Check submitted
9. Results submitted on a dry weight basis
10. Method Detection Limits submitted
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP

✓
✓
✓
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✓
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✓
✓
✓
✓

Laboratory Manager or Environmental Consultant's Signature

Date 4/7/00



Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

000085

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager

000086

APPENDIX F

GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT Fort Monmouth Environmental Laboratory ENVIRONMENTAL DIVISION Fort Monmouth, New Jersey PROJECT: UST Program

Bldg. 1107

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1107-1 2'	4936.01	Soil	13-Nov-99 11:43	11/15/99
1107-2 2'	4936.02	Soil	13-Nov-99 11:48	11/15/99
1107-3 2'	4936.03	Soil	13-Nov-99 11:52	11/15/99
1107-4 2'	4936.04	Soil	13-Nov-99 11:58	11/15/99
1107-GW-5-9'	4936.05	Aqueous	13-Nov-99 12:00	11/15/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15, TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

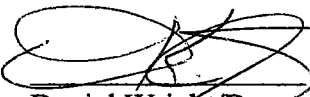
 4-7-00
Daniel Wright/Date
Laboratory Director

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MS/MSD Results Summary	71-72
Chromatograms	73-84
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CHAIN OF CUSTODY

000001

METHOD SUMMARY

000003

Method Summary

EPA Method 624

Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty-five milliliters (25mL) Methylene Chloride is added to the flask and it is secured on an orbital shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is then removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL-autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

000004

CONFORMANCE/NON- CONFORMANCE SUMMARY

000005

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

1. Chromatograms labeled/Compounds identified
(Field samples and method blanks) yes
2. Retention times for chromatograms provided yes
3. GC/MS Tune Specifications
 - a. BFB Meet Criteria yes
 - b. DFTPP Meet Criteria yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
6. GC/MS Calibration requirements
 - a. Calibration Check Compounds Meet Criteria yes
 - b. System Performance Check Compounds Meet Criteria yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank: no
 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction _____
8. Surrogate Recoveries Meet Criteria yes

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction _____

If not met, were the calculations checked and the results qualified as “estimated”?

9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria yes

(If not met, list those compounds and their recoveries, which fall outside the acceptable range)

 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction _____

000006

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria
(If not met, list those compounds, which fall outside the acceptable range)

yes

- a. VOA Fraction _____
b. B/N Fraction _____
c. Acid Fraction _____

11. Extraction Holding Time Met

yes

If not met, list the number of days exceeded for each sample: _____

12. Analysis Holding Time Met

yes

If not met, list the number of days exceeded for each sample: _____

Additional Comments:

Laboratory Manager: _____

Date: 4-7-00

000007

TPHC CONFORMANCE/NON - CONFORMANCE SUMMARY REPORT

Indicate
Yes, No, N/A

- | | | |
|----|---|------------|
| 1. | Method Detection Limits Provided | <u>yes</u> |
| 2. | Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

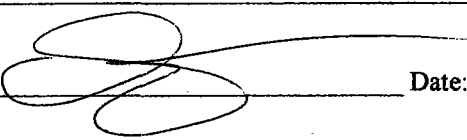
_____ | <u>no</u> |
| 3. | Matrix Spike Results Summary Meet Criteria
(If not met, list the sample and corresponding recovery which falls outside the acceptable range)

_____ | <u>yes</u> |
| 4. | Duplicate Results Summary Meet Criteria

_____ | <u>yes</u> |
| 5. | IR Spectra submitted for standards, blanks and samples | <u>NA</u> |
| 6. | Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted | <u>yes</u> |
| 7. | Analysis holding time met
(If not met, list number of days exceeded for each sample)

_____ | <u>yes</u> |

Additional comments: _____

Laboratory Manager:  Date: 4-7-00

000008

LABORATORY CHRONICLE

000009

Laboratory Chronicle

Lab ID: 4936

Site: Bldg. 1107

	Date	Hold Time
Date Sampled	11/13/99	NA
Receipt/Refrigeration	11/13/99	NA

Extractions

1. Base Neutral	11/16/99	14 days
2. TPHC	11/17/99	14 days

Analyses

1. Volatile Organics	11/15,16/99	14 days
2. Base Neutral	11/19/99	40 days
3. TPHC	11/17/99	

*Samples collected and refrigerated on 11/13/99, Laboratory received the samples Monday 11/15/99.

000010

VOLATILES ORGANIC

000011

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound in both sample and blank
D : Results from dilution of sample
U : Compound searched for but not detected
E : Compound exceeds calibration limit

000012

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VB004794.D**
 Operator **Skelton**
 Date Acquired **15 Nov 1999 3:31 pm**

Sample Name **Vblk147**
 Field ID **Vblk147**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
 E = Value above linear range
 D = Value from dilution
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit
 NLE = No Limit Established
 R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Vblk147

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4936 Location: Bldg11 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: Vblk147
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB004794.D
Level: (low/med) LOW Date Received: 11/15/99
% Moisture: not dec. Date Analyzed: 11/15/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/LNumber TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VB004810.D**
 Operator **Skelton**
 Date Acquired **16 Nov 1999 2:23 am**

Sample Name **4936.05**
 Field ID **1107-GW**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
 E = Value above linear range
 D = Value from dilution
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit
 NLE = No Limit Established
 R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

1107-GW

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4936 Location: Bldg11 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 4936.05
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB004810.D
Level: (low/med) LOW Date Received: 11/15/99
% Moisture: not dec. Date Analyzed: 11/16/99
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/LNumber TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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4A

Lab ID.

VOLATILE METHOD BLANK SUMMARY

Vblk145

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4936 Location: Bldg11 SDG No.:
Lab File ID: VB004723.D Lab Sample ID: Vblk145
Date Analyzed: 11/8/99 Time Analyzed: 17:50
GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N
Instrument ID: GCMS#2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	Lab ID.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	4913.01MS	4913.01MS	VB004746.D	9:22
02	4913.01MSD	4913.01MSD	VB004747.D	10:01

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

Vblk147

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4936 Location: Bldg11 SDG No.:
Lab File ID: VB004794.D Lab Sample ID: Vblk147
Date Analyzed: 11/15/99 Time Analyzed: 15:31
GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N
Instrument ID: GCMS#2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	Lab ID.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	1107-GW	4936.05	VB004810.D	2:23

COMMENTS:

BASE NEUTRAL

000036

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03387.D**
Operator **Bhaskar**
Date Acquired **19-Nov-99**

Sample Name **Sblk321**
Misc Info **Sblk321 A 991116**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91 ug/L	
62-53-3	Aniline			not detected	NLE	1.63 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13 ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50 ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97 ug/L	
78-59-1	Isophorone			not detected	100	1.01 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79 ug/L	
83-32-9	Acenaphthene			not detected	400	1.10 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87 ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62 ug/L	
86-73-7	Fluorene			not detected	300	0.99 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23 ug/L	
120-12-7	Anthracene			not detected	2000	1.12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70 ug/L	
206-44-0	Fluoranthene			not detected	300	1.64 ug/L	

Semi-Volatile Analysis Report

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Data File Name **BNA03387.D**
 Operator **Bhaskar**
 Date Acquired **19-Nov-99**

Sample Name **Sblk321**
 Misc Info **Sblk321 A 991116**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	4.18 ug/L	
129-00-0	Pyrene			not detected	200	1.25 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75 ug/L	
218-01-9	Chrysene			not detected	20	1.38 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84 ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
 D= Value from dilution
 B= Compound in Related Blank
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit
 NLE= No Limit Established
 R.T.=Retention Time

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk321

Lab Name: FMETL Lab Code 13461
Project UST Case No.: 4936 Location 1107 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: Sblk321
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03387.D
Level: (low/med) LOW Date Received: 11/15/99
% Moisture: decanted: (Y/N) N Date Extracted: 11/16/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA03389.D

Sample Name 4936.05

Operator Bhaskar

Misc Info 1107-GW

Date Acquired 19-Nov-99

Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91 ug/L	
62-53-3	Aniline			not detected	NLE	1.63 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13 ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50 ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97 ug/L	
78-59-1	Isophorone			not detected	100	1.01 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79 ug/L	
83-32-9	Acenaphthene			not detected	400	1.10 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87 ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62 ug/L	
86-73-7	Fluorene			not detected	300	0.39 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23 ug/L	
120-12-7	Anthracene			not detected	2000	1.12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70 ug/L	
206-44-0	Fluoranthene			not detected	300	1.64 ug/L	

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03389.D**
 Operator **Bhaskar**
 Date Acquired **19-Nov-99**

Sample Name **4936.05**
 Misc Info **1107-GW**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	4.18 ug/L	
129-00-0	Pyrene			not detected	200	1.25 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75 ug/L	
218-01-9	Chrysene			not detected	20	1.38 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84 ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
 D= Value from dilution
 B= Compound in Related Blank
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit
 NLE= No Limit Established
 R.T.=Retention Time

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

1107-GW

Lab Name: FMETL Lab Code 13461
Project UST Case No.: 4936 Location 1107 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 4936.05
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03389.D
Level: (low/med) LOW Date Received: 11/15/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 11/16/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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4B

FIELD ID

SEMIVOLATILE METHOD BLANK SUMMARY

Sblk321

Lab Name: FMETL Lab Code 13461
Project UST Case No.: 4936 Location 1107 SDG No.:
Lab File ID: BNA03387.D Lab Sample ID: Sblk321
Instrument ID: GC BNA 2 Date Extracted: 11/16/99
Matrix: (soil/water) WATER Date Analyzed: 11/19/99
Level: (low/med) LOW Time Analyzed: 16:39

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	1107-GW	4936.05	BNA03389.D	11/19/99

COMMENTS:

5B

**SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)**

Lab Name: FMETL Lab Code 13461
 Project UST Case No.: 4936 Location 1107 SDG No.:
 Lab File ID: BNA03321.D DFTPP Injection Date: 10/27/99
 Instrument ID: BNA#2 DFTPP Injection Time: 9:32

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	60.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	56.4
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	53.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	19.9
365	Greater than 0.75% of mass 198	2.0
441	Present, but less than mass 443	8.7
442	40.0 - 110.0% of mass 198	59.1
443	15.0 - 24.0% of mass 442	12.0 (20.4)2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA03323.D	10/27/99	10:55
02	SSTD080	80 PPM CAL	BNA03324.D	10/27/99	11:50
03	SSTD050	50 PPM CAL	BNA03325.D	10/27/99	12:40
04	SSTD010	10 PPM CAL	BNA03326.D	10/27/99	13:31
05	SSTD020	20 PPM CAL	BNA03327.D	10/27/99	14:20
06	4871.04DUP	4871.04DUP	BNA03332.D	10/27/99	18:28
07	4871.04MS	4871.04MS	BNA03333.D	10/27/99	19:17

Data File : C:\HPCHEM\1\DATA\991027\BNA03321.D

Vial: 99

Acq On : 27 Oct 1999 9:32 am

Operator: Bhaskar

Sample : DFTPP TUNE

Inst : GC BNA 2

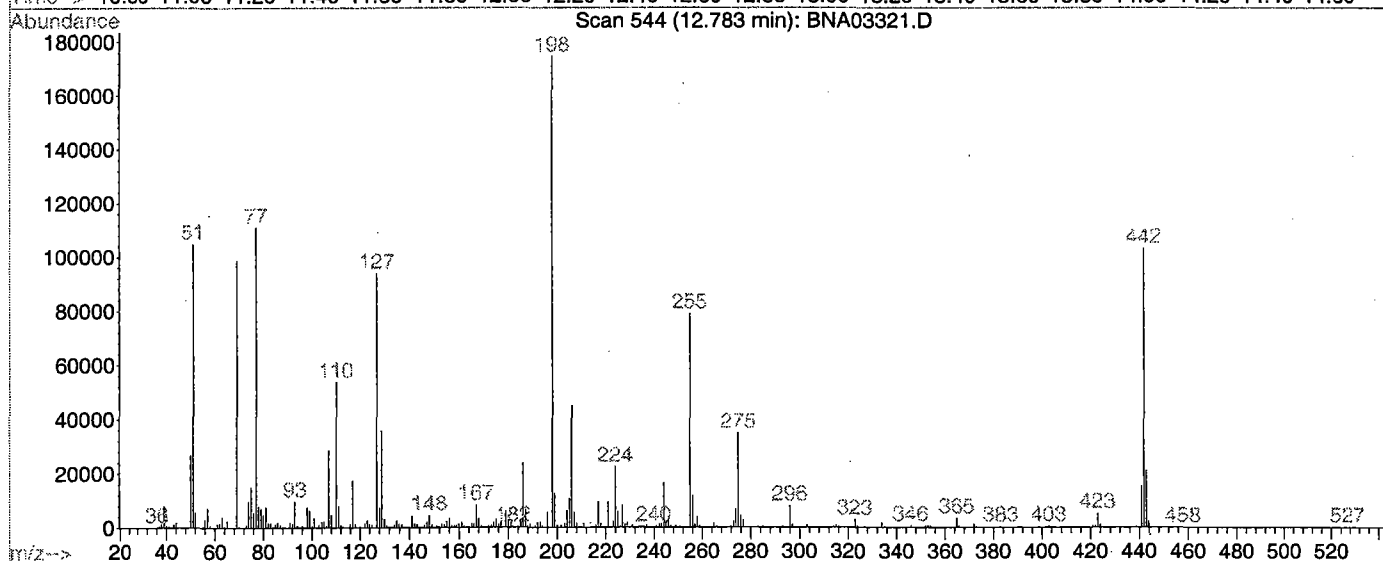
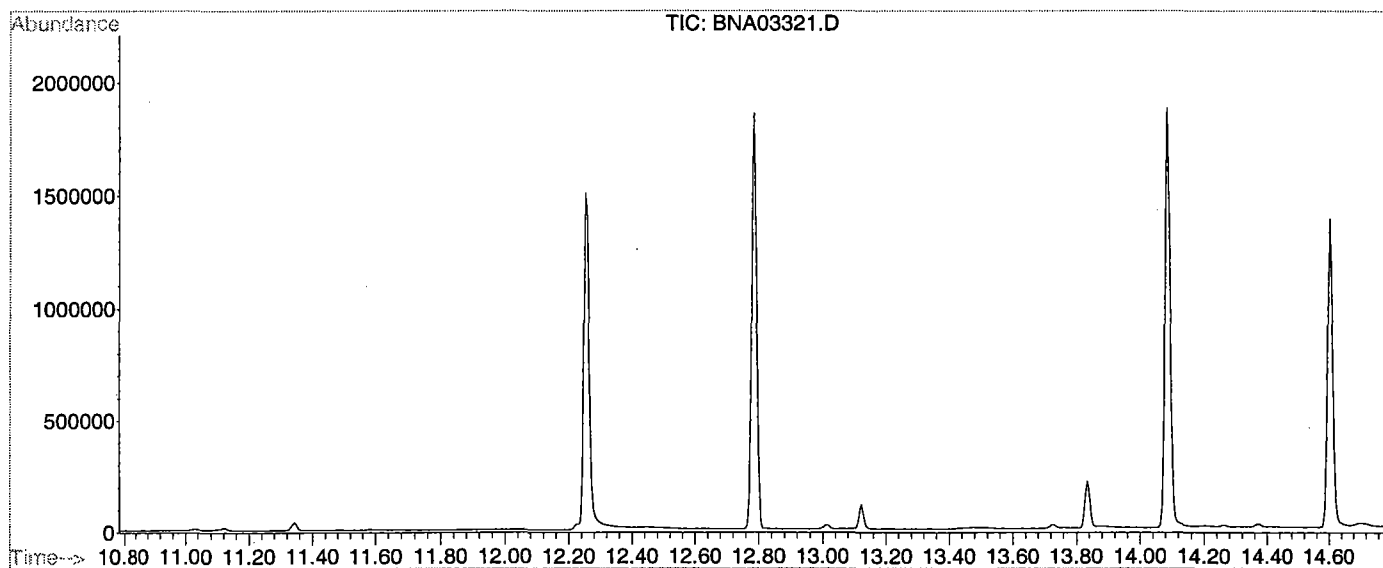
Misc : 50NG/2UL

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)

Title : BNA Calibration



Spectrum Information: Scan 544

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	60.0	104832	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	56.4	98600	PASS
70	69	0.00	2	0.6	593	PASS
127	198	40	60	53.8	94000	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	174720	PASS
199	198	5	9	7.1	12479	PASS
275	198	10	30	19.9	34848	PASS
365	198	1	100	2.0	3527	PASS
441	443	1	99	72.0	15134	PASS
442	198	40	100	59.1	103184	PASS
443	442	17	23	20.4	21008	PASS

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted
2. Table of Contents submitted
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted
4. Document paginated and legible
5. Chain of Custody submitted
6. Samples submitted to lab within 48 hours of sample collection
7. Methodology Summary submitted
8. Laboratory Chronicle and Holding Time Check submitted
9. Results submitted on a dry weight basis
10. Method Detection Limits submitted
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP

✓
✓
✓
✓
✓
✓
✓
✓
✓
✓
✓

Laboratory Manager or Environmental Consultant's Signature

Date 4/7/00



Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

000085

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager

000086

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: UST Program

Bldg. 1107

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1107-1 10-15'	5083.01	Aqueous	08-Jan-00 09:50	01/10/00

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

 5-8-00
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

[illegible]

METHODOLOGY SUMMARY

000003

Method Summary

EPA Method 624

Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

000004

CONFORMANCE NON-CONFORMANC SUMMARY

000005

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

1. Chromatograms Labeled/Compounds Identified
(Field Samples and Method Blanks) yes
2. Retention times for chromatograms provided yes
3. GC/MS Tune Specifications
 - a. BFB Meet Criteria yes
 - b. DFTPP Meet Criteria yes
4. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series yes
5. GC/MS Calibration - Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
6. GC/MS Calibration Requirements
 - a. Calibration Check Compounds Meet Criteria yes
 - b. System Performance Check Compounds Meet Criteria yes
7. Blank Contamination - If yes, List compounds and concentrations in each blank: NO
 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction NA
8. Surrogate Recoveries Meet Criteria yes

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction NA

If not met, were the calculations checked and the results qualified as "estimated"? _____
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria yes

(If not met, list those compounds and their recoveries, which fall outside the acceptable range)

 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction NA

GC/MS Analysis Conformance/Non-Conformance Summary (cont.)

Indicate
Yes,
No,
N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria
(If not met, list those compounds, which fall outside the acceptable range)

yes

- a. VOA Fraction _____
b. B/N Fraction _____
c. Acid Fraction _____

11. Extraction Holding Time Met

yes

If not met, list number of days exceeded for each sample: _____

12. Analysis Holding Time Met

yes

If not met, list number of days exceeded for each sample: _____

Additional Comments:

Laboratory Manager :



Date:

5-8-00

LABORATORY CHRONICLE

000008

Laboratory Chronicle

Lab ID: 5083

Site: Bldg. 1107

	Date	Hold Time
Date Sampled	01/08/00	NA
Receipt/Refrigeration	01/08/00	NA
Extractions		
1. Base Neutral	01/10/00	14 days
Analyses		
1. Volatile Organics	01/11/00	14 days
2. Base Neutral	01/11/00	40 days

- Samples collected and refrigerated on 01/08/00, Laboratory received the sample on Monday 01/10/00.

000009

VOLATILE ORGANICS

000010

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound in both sample and blank
D : Results from dilution of sample
U : Compound searched for but not detected
E : Compound exceeds calibration limit

000011

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VC001962.D**
 Operator **Skelton**
 Date Acquired **11 Jan 2000 11:17 am**

Sample Name **Vblk51**
 Field ID **Vblk51**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
 E = Value above linear range
 D = Value from dilution
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit
 NLE = No Limit Established
 R.T. = Retention Time

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Vb1k51

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5083 Location: 1107 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Vb1k51
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001962.D
Level: (low/med) LOW Date Received: 1/10/00
% Moisture: not dec. _____ Date Analyzed: 1/11/00
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VC001991.D**
 Operator **Skelton**
 Date Acquired **12 Jan 2000 7:37 am**

Sample Name **5083.01**
 Field ID **1107-1**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
 E = Value above linear range
 D = Value from dilution
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit
 NLE = No Limit Established
 R.T. = Retention Time

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

1107-1

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5083 Location: 1107 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 5083.01
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001991.D
Level: (low/med) LOW Date Received: 1/10/00
% Moisture: not dec. Date Analyzed: 1/12/00
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)**

Lab Name: FMETL NJDEP#: 13461
 Project: 100004 Case No.: 5083 Location: 1107 SDG No.:
 Lab File ID: VC001924.D BFB Injection Date: 1/10/00
 Instrument ID: Voalnst#3 BFB Injection Time: 9:00
 GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.4
75	30.0 - 66.0% of mass 95	52.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	59.3
175	4.0 - 9.0% of mass 174	4.1 (6.9)1
176	93.0 - 101.0% of mass 174	56.3 (95.0)1
177	5.0 - 9.0% of mass 176	3.1 (5.5)2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC001925.D	1/10/00	9:32
02	VSTD010	VSTD010	VC001926.D	1/10/00	10:30
03	VSTD100	VSTD100	VC001928.D	1/10/00	11:52
04	VSTD050	VSTD050	VC001929.D	1/10/00	12:33
05	VSTD005	VSTD005	VC001930.D	1/10/00	13:15
06	VBLK50	VBLK50	VC001931.D	1/10/00	14:08
07	5071.29MS	5071.29MS	VC001957.D	1/11/00	8:05
08	5071.29MSD	5071.29MSD	VC001958.D	1/11/00	8:46

Data File : C:\HPCHEM\1\DATA\000110\VC001924.D

Vial: 1

Acq On : 10 Jan 2000 9:00 am

Operator: Skelton

Sample : BFB Tune

Inst : GC/MS Ins

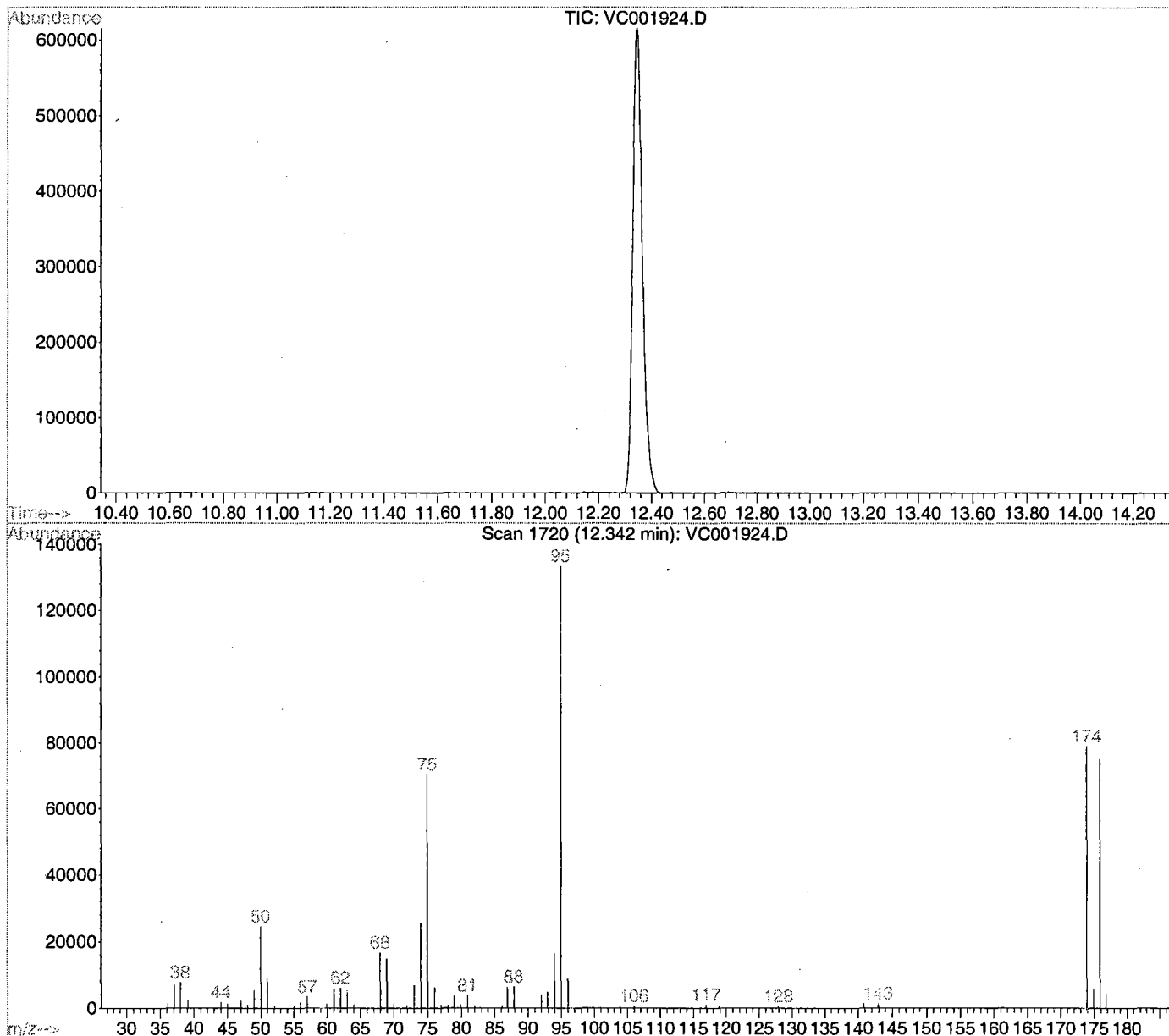
Misc : BFB Tune

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\M362417.M (RTE Integrator)

Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 1720

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	24568	PASS
75	95	30	60	52.8	70520	PASS
95	95	100	100	100.0	133504	PASS
96	95	5	9	6.6	8789	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	59.3	79112	PASS
175	174	5	9	6.9	5442	PASS
176	174	95	101	95.0	75160	PASS
177	176	5	9	5.5	4130	PASS

BASE NEUTRAL

000033

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA03543.D

Operator Bhaskar

Date Acquired 11-Jan-00

Sample Name Sblk335

Misc Info Sblk335 A 000110

Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91 ug/L	
62-53-3	Aniline			not detected	NLE	1.63 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13 ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50 ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97 ug/L	
78-59-1	Isophorone			not detected	100	1.01 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79 ug/L	
83-32-9	Acenaphthene			not detected	400	1.10 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87 ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62 ug/L	
86-73-7	Fluorene			not detected	300	0.99 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23 ug/L	
120-12-7	Anthracene			not detected	2000	1.12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70 ug/L	
206-44-0	Fluoranthene			not detected	300	1.64 ug/L	

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Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03543.D**
 Operator **Bhaskar**
 Date Acquired **11-Jan-00**

Sample Name **Sblk335**
 Misc Info **Sblk335 A 000110**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	4.18 ug/L	
129-00-0	Pyrene			not detected	200	1.25 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75 ug/L	
218-01-9	Chrysene			not detected	20	1.38 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84 ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
 D= Value from dilution
 B= Compound in Related Blank
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit
 NLE= No Limit Established
 R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk335

Lab Name: FMETL Lab Code 13461
Project 100004 Case No.: 5083 Location Bl.1107 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: Sblk335
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03543.D
Level: (low/med) LOW Date Received: 1/10/00
% Moisture: decanted: (Y/N) N Date Extracted: 1/10/00
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/11/00
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Semi-Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File Name **BNA03542.D**
 Operator **Bhaskar**
 Date Acquired **11-Jan-00**

Sample Name **5083.01**
 Misc Info **1107-1**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91 ug/L	
62-53-3	Aniline			not detected	NLE	1.63 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13 ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50 ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97 ug/L	
78-59-1	Isophorone			not detected	100	1.01 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79 ug/L	
83-32-9	Acenaphthene			not detected	400	1.10 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87 ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62 ug/L	
86-73-7	Fluorene			not detected	300	0.99 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23 ug/L	
120-12-7	Anthracene			not detected	2000	1.12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70 ug/L	
206-44-0	Fluoranthene			not detected	300	1.64 ug/L	

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03542.D** Sample Name **5083.01**
 Operator **Bhaskar** Misc Info **1107-1**
 Date Acquired **11-Jan-00** Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	4.18 ug/L	
129-00-0	Pyrene			not detected	200	1.25 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75 ug/L	
218-01-9	Chrysene			not detected	20	1.38 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84 ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
 D= Value from dilution
 B= Compound in Related Blank
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit
 NLE= No Limit Established
 R.T.=Retention Time

Page 2 of 2

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

1107-1

Lab Name: FMETL Lab Code 13461
Project 100004 Case No.: 5083 Location Bl.1107 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 5083.01
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03542.D
Level: (low/med) LOW Date Received: 1/10/00
% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/10/00
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/11/00
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461
 Project 100004 Case No.: 5083 Location Bl.1107 SDG No.: _____
 Lab File ID: BNA03470.D DFTPP Injection Date: 12/22/99
 Instrument ID: BNA#2 DFTPP Injection Time: 9:53

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	45.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	43.9
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	25.0 - 75.0% of mass 198	50.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	22.5
365	Greater than 0.75% of mass 198	2.5
441	Present, but less than mass 443	13.5
442	40.0 - 110.0% of mass 198	89.7
443	15.0 - 24.0% of mass 442	17.5 (19.5)2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA03471.D	12/22/99	10:20
02	SSTD080	80 PPM CAL	BNA03472.D	12/22/99	11:07
03	SSTD050	50 PPM CAL	BNA03473.D	12/22/99	11:55
04	SSTD020	20 PPM CAL	BNA03474.D	12/22/99	12:42
05	SSTD010	10 PPM CAL	BNA03475.D	12/22/99	13:30

Data File : C:\HPCHEM\1\DATA\991222\BNA03470.D

Vial: 99

Acq On : 22 Dec 1999 9:53 am

Operator: Bhaskar

Sample : DFTPP TUNE

Inst : GC BNA 2

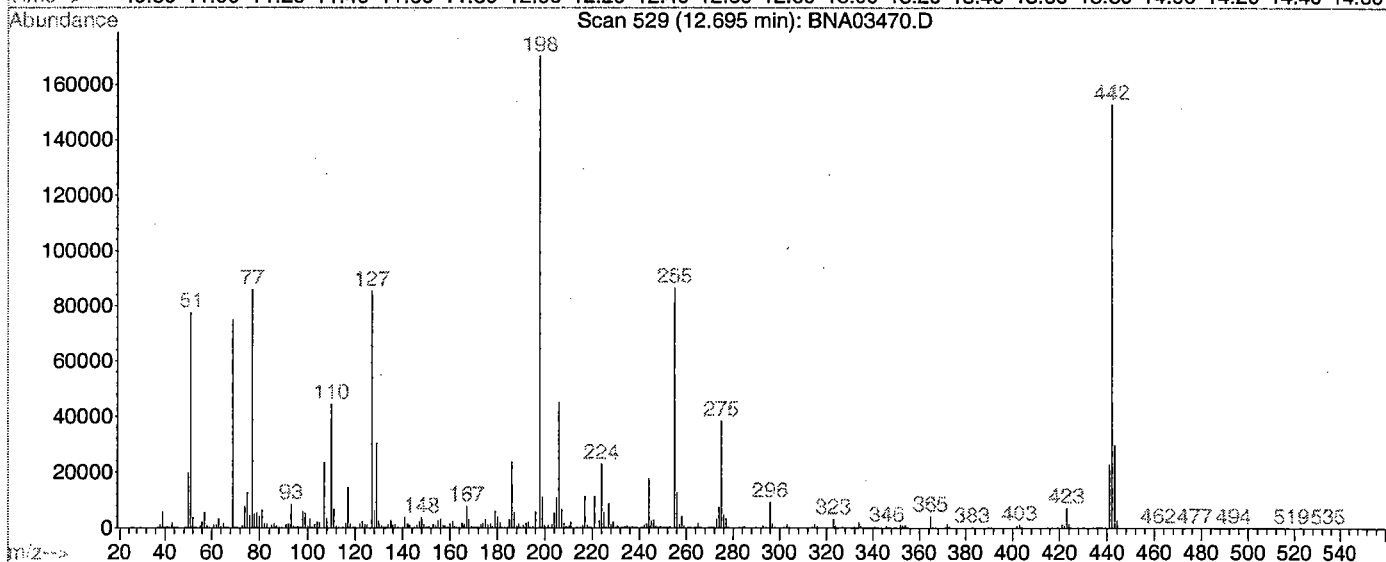
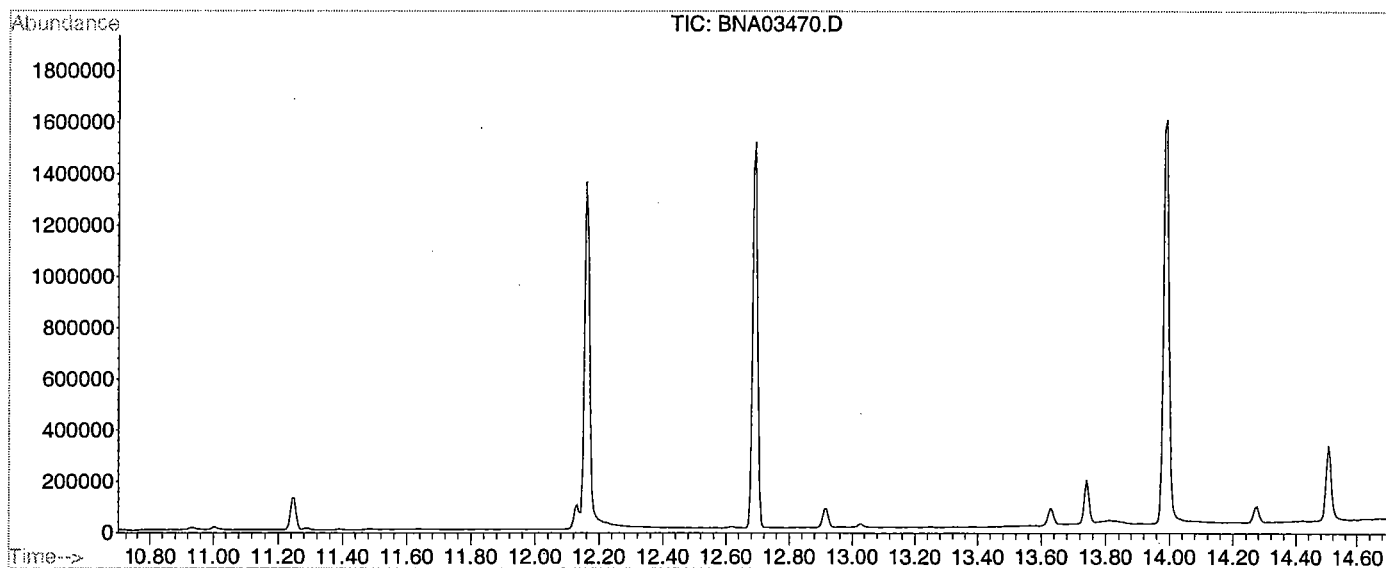
Misc : 50 NG/2UL

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)

Title : BNA Calibration



Spectrum Information: Scan 529

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	45.5	77600	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.9	74840	PASS
70	69	0.00	2	0.5	381	PASS
127	198	40	60	50.1	85376	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	170496	PASS
199	198	5	9	6.4	10917	PASS
275	198	10	30	22.5	38408	PASS
365	198	1	100	2.5	4279	PASS
441	443	1	99	77.1	23000	PASS
442	198	40	100	89.7	152896	PASS
443	442	17	23	19.5	29848	PASS

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ☒
2. Table of Contents submitted ☒
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ☒
4. Document paginated and legible ☒
5. Chain of Custody submitted ☒
6. Samples submitted to lab within 48 hours of sample collection ☒
7. Methodology Summary submitted ☒
8. Laboratory Chronicle and Holding Time Check submitted ☒
9. Results submitted on a dry weight basis ☒
10. Method Detection Limits submitted ☒
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ☒

Laboratory Manager or Environmental Consultant's Signature

Date 5/4/00

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP
Methods for further guidance.

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Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager

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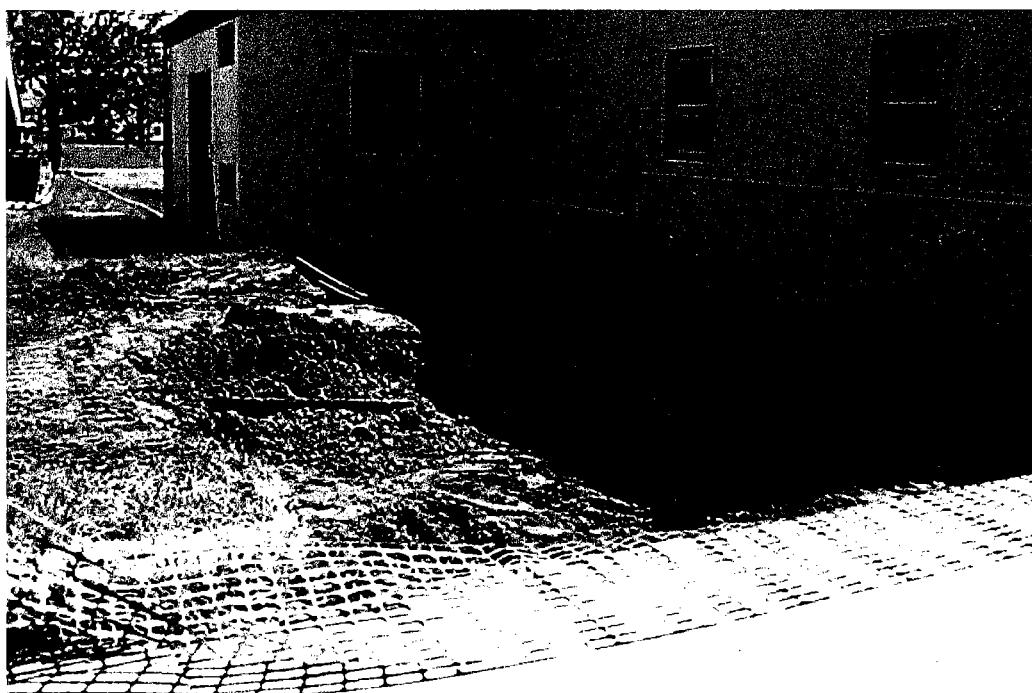
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APPENDIX G

PHOTOGRAPHS



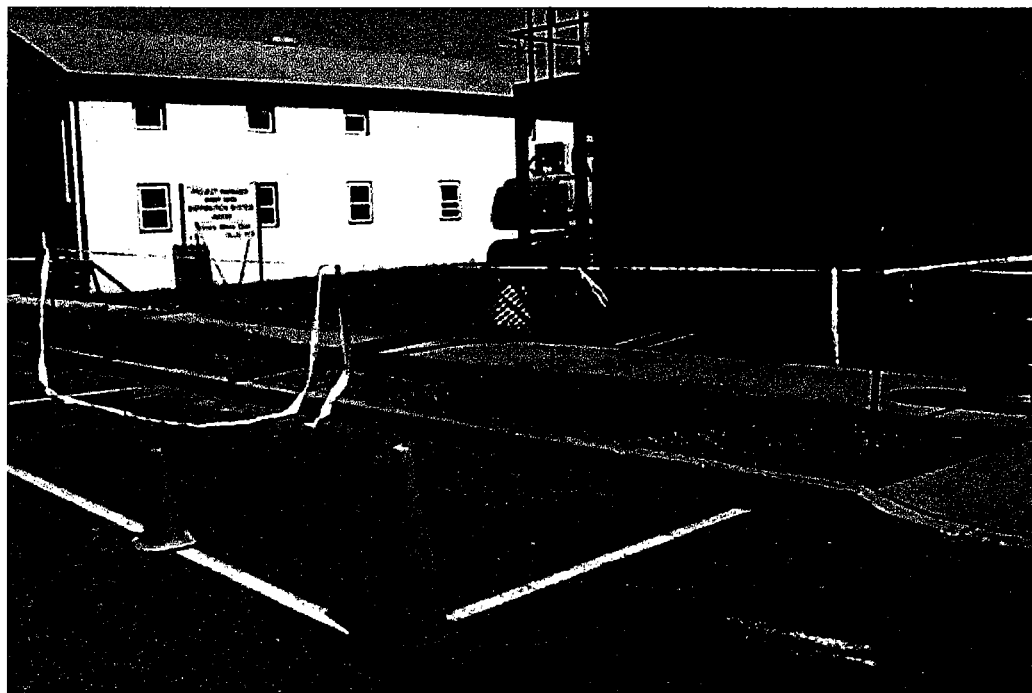
MAY 1998

PHOTOGRAPHIC LOG

UST NO. 81533-167 and 233

**Building 1107
Main Post-West
Fort Monmouth**

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA



MAY 1998
PHOTOGRAPHIC LOG

UST NO. 81533-167 and 233

Building 1107
Main Post-West
Fort Monmouth

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA

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APPENDIX H

ELECTRONIC DATA DELIVERABLES

Bldg. 1107 UST Sample Points GPS Positons & Coordinates

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
15-May		
1107 A	538551.018	617920.273
1107 B	538557.738	617913.191
1107 C C2	538568.787	617910.142
1107 D	538577.887	617894.803
1107 E	538574.556	617915.577
DUP D	538577.887	617894.803
19-May		
1107 A	538561.259	617917.552
1107 B	538565.675	617924.631
1107 C	538561.173	617925.947
1107 D	538562.178	617923.370
1107 E	538564.497	617914.680
1107 F	538574.492	617888.668
DUP C	538561.173	617925.947
22-May		
A	538561.260	617917.552
28-May		
A	538571.884	617927.748
13-Nov		
1	538576.144	617887.704
DUP1	538576.144	617887.704
2	538573.468	617886.980
3	538572.456	617889.656
4	538575.420	617890.452
GW		
1107-GW	538566.832	617920.228